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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Observations on Lithotomy.* By SIR PHILIP CRAMPTON, Bart., F.R.S., M.R.I.A., Surgeon-General to the Forces in Ireland, and Surgeon in Ordinary to the Queen in Ireland.

TO THE EDITOR OF THE DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE.

DEAR SIR,—In the following observations on lithotomy I do not intend to encumber your pages with historical details, or critical inquiries respecting obsolete operations: my intention is merely to inquire, for the information of the younger part of the profession, in what manner "the lateral operation," the invention of which is generally ascribed to Cheselden, can be most conveniently and safely performed; and to describe a mode of operating for the stone in women, which is not liable to the objection of being followed by incontinence of urine, an objection which, to a greater or lesser degree, applies to every mode of perinæal lithotomy in women, and even to the method by dilation, *when the stone is of unusually large dimensions.*

The intention of the lateral operation is to reach the cavity of the bladder, from the perinæum, by an opening which shall leave untouched the bulb of the urethra anteriorly, and the membraneous part of the bladder beyond the prostate posteriorly. It is an important principle of the operation that the opening should in some wise be proportioned to the size of the stone, so that if it be large it may be extracted with the least possible violence to the soft parts generally, but particularly to the neck of the bladder and prostate. This, no doubt, could be effected by making a complete division of the prostate either on one or both sides; but experience has shewn that such a division of the gland, if it include the fibro-membraneous sheath by which it is covered, is fraught with dangers quite as great as those arising from its laceration, namely, infiltration of urine into the loose cellular tissue that connects the back of the prostate with the rectum. It may be stated, then, as a general proposition, to which I am not aware that there is any exception, that that mode of performing the lateral operation is the best, which effects the division of the prostate gland to the required extent, by an incision which shall neither be so superficial as not to admit of the introduction of the forceps without causing laceration of the neck of the bladder, nor so deep as to divide the prostate gland, through its entire thickness, up to its base.

It may be thought by many, and particularly by those who form their notions of lithotomy from what they have read, rather than from what they have seen or practised, that it is a very simple matter, an operation that every man having a competent knowledge of the anatomy of the parts concerned, and some acquaintance with the management of surgical instruments, might undertake without any considerable anxiety as to the result; and if they have seen an expert operator extract a stone in less than a minute from a healthy boy of from six to twelve years of age, their favourable impressions with respect to the simplicity of lithotomy are likely to be confirmed. A

little more experience, however, will cause them to distrust their first impressions, and they will find that it was on no insufficient grounds that the most distinguished anatomist and surgeon of his age and country,—one who, if not the inventor, was at least the greatest improver, of the lateral operation,—thus expressed himself when writing of an operation which he had performed more frequently, and with more success, than any other living man. "If," says the the illustrious Cheselden, "I have any reputation in this way, I have earned it dearly, for no one ever endured more anxiety and sickness before an operation" (of lithotomy); "yet from the time I began to operate, all uneasiness ceased; and if I have had better success than some others, I do not impute it to more knowledge, but to the happiness of a mind that was never ruffled or disconcerted, and a hand that never trembled during any operation(*a*)."

The principle of the lateral operation, then, is easily understood, but this principle has been worked out in a variety of ways, and we are naturally led to inquire, in the first place, what was the mode of proceeding adopted by Cheselden, who is generally supposed to be the inventor of the operation.

It is among the most remarkable circumstance in the history of operative surgery that the mode in which the lateral operation was performed by its real inventor, Frere Jacques, and by its improvers Rau and Cheselden, is still a subject of uncertainty and debate. Mr. Sharp(*b*) says that, when he was in France he "saw a small pamphlet *published by the Friar*,

(*a*) *Manu strenua, stabili, nec unquam intremiscente*, is the motto prefixed by Cheselden to his edition of Le Dran's Operations, translated by Gataker. It is not difficult to see what was passing in the mind of that great surgeon when he prefixes this motto to a "Treatise on the Operations of Surgery," nor can we doubt why he omitted the *animo immisericors* with which Celsus concludes his catalogue of the qualifications of a surgeon. And how fine a lesson does this omission read to those who, in the desire to appear above the natural weakness of our nature, assume, when they are about to perform a difficult and dangerous operation, an air of unconcern, not to say of levity, which is the more offensive for being at once unnatural and unreal!

(*b*) Treatise on the Operations in Surgery. London, 1742.

in 1702, in which his method of operating appeared so much improved that it differed in nothing, or but very little, from the present practice." Now this comes from the contemporary, pupil, and friend of Cheselden, and at once transfers the credit of the *invention* of the lateral operation from that distinguished surgeon to the friar; for Cheselden, by his own account, could not have performed *his* lateral operation earlier than the year 1720 or 1721. Now what the operation was, is far from being determined. Sir Benjamin Brodie, describing with his usual clearness the lateral operation, as it is now generally performed, says: "The point of the knife is steadily introduced into the bladder, along the groove of the staff, with the edge turned outwards, so as to divide the left side of the prostate;—and this" he adds "was Cheselden's method of operating. I draw this conclusion from Cheselden's own account of his operation, not from the absurd statement published by his contemporary, Dr. Douglas, who evidently understood nothing of the matter, and indeed describes an operation next to impossible to perform." Dr. Douglas, however, who wrote during Cheselden's life-time, states in his preface that "He is obliged to Mr. Cheselden for the materials of this paper, which it was impossible to draw up without his having been so good as to communicate to him, without reserve, *all the particulars*, which he could not otherwise have come to the knowledge of." "I am confident," he adds, "that none will pretend to dispute but what I here describe is his operation and his whole operation;"(*a*) but, alas! for human confidence and for human testimony, here we are, 115 years after this expression of confidence, disputing as to what the lateral operation of Cheselden actually was. It is plain, however, that Cheselden, before the publication of his "Treatise on cutting for the Stone" had materially modified his operation; and, if we may depend on his own account of his own operation, it was exactly as Sir Benjamin Brodie describes

(*a*) Appendix to the History of the Lateral Operation, containing Mr. Cheselden's present Method of Operating. London, 1731.

it, "next to impossible to be performed." Here is his description taken, from the thirteenth and last edition of his Anatomy, published in London, in 1792. "Upon these disappointments,"—the fatal results of operations in which he intended, after the manner of Rau, to open the lower fundus of the bladder without engaging its neck,—"I contrived the manner of cutting which is now called the lateral way." Having described the first stage, which differs in nothing from the lateral operation as now performed, he continues: "I then feel for the staff, holding down the gut all the while with one or two fingers of the left hand, and cut upon it in that part of the urethra which lies *beyond* the corpora cavernosa," (the membraneous part), "and *in* the prostate gland, cutting from *below upwards*, to avoid wounding the gut, and then passing the gorget," &c. Now it must be confessed that it is difficult to believe that by the words from "below upwards" Cheselden meant to imply that he cut from *before backwards;* yet I can just imagine that he might intend to advise the directing the *point* of the knive upwards towards the arch of the pubis, in contra-distinction to downwards towards the rectum. The words, however, are, it must be admitted, unfortunately chosen, since they have left the meaning of the writer so much in doubt; it is unfortunate, too, for this explanation of the words from "*below upwards*," that they were differently understood by Mr. Sharp, who was the pupil of Cheselden (to whom he dedicates his work), and by Mr. Bromfield, who was his contemporary. Mr. Sharp, when describing Cheselden's operation, which, he adds, "is now the practice of most English surgeons," advises "the incision to be carried deeper between the muscles till the prostate can be felt, when searching for the staff, and, turning it properly if it has slipt, you turn *the edge of the knife upwards* and cut the whole length of the gland from *within outwards*, pushing down the rectum with a finger or two of the left hand." There is no ambiguity here, and every surgeon in the least conversant with lithotomy will admit that if Cheselden's operation, as de-

scribed by Dr. Douglas, be "nearly impossible to be performed," the operation, as described by himself and Mr. Sharp, is in precisely the same predicament. If, then, it be *next* to impossible "to perform Cheselden's operation in the manner described by Dr. Douglas," some of your readers will be surprised to hear that it is *quite* impossible to perform Rau's operation in the manner described by Albinus; of this any one may satisfy themselves by a reference to the *Index Supellectilis Anatomicæ*, published by Albinus, at Leyden, in 1725; or, what is more accessible and clearer, Le Dran's *Parallele des differentes Manieres*, &c. Le Dran, having given a translation of Albinus's account of the operation, adds, in the very spirit of that politeness for which his country is justly celebrated: "*Je ne suis point ingrat, et je me joins au Public pour marquer à Mr. Albinus ma reconnoissance du present qu'il nous a fait; mais je ne puis me dispenser de dire qu'il est bien difficile pour ne pas dire impossible d'accorder la figure de la Sonde dont il donne le dessein avec la structure des parties*(a)." He then gives the opinion of Morand and others as to the utter impossibility of dividing the lower fundus of the bladder at its side and beyond its neck, on the groove of a staff lying in the urethra.

It is remarkable that Le Dran, who never saw Cheselden operate, gives the best description extant of his operation, and one which fully corroborates Sir Benjamin Brodie's view of the subject. "It may seem strange," says Le Dran, "that I should undertake to describe an operation that I never saw performed by its inventor; . . . . . but those who are in the habit of operating, and who are perfectly acquainted with the structure and position of the parts, are in a position to judge what *must have been* the operation of Cheselden, when we know (as we do at present from those who have seen this great man operate) the place where he made his first incision, the shape of his lithotome, that of the staff which he employed, and the manner

(a) *Parallele des Differentes Manieres de tirer la Pierre hors de la vessie.* Par Henry-Francois Le Dran. A Paris, Osmont. MDCCXXX.—page 115.

in which he placed it after its introduction." Then follows his description of the operation, which I venture to translate, because, although written by a foreigner, who never saw Cheselden operate, it is, in my opinion, the best account of his operation extant; and the book in which it is contained is in the hands but of a few.

" The incision ought to begin on the left side of the raphe, a very little above the lower part of the erector penis (very nearly as in the lateral operation of Rau). This incision should be extended towards the tuberosity of the ischium, and should finish between that tuberosity and the anus. If, from the length of time the patient has suffered from the stone, there be reason to apprehend that the stone is large, the incision should be extended somewhat farther; it should be sufficiently deep to penetrate (by two or three strokes of the knife) beyond the accelerator muscle and a little on this side of the prostate, but below or deeper than the transversalis perinæi. As the left hand of the operator is not engaged in holding the staff, the index finger of that hand, being introduced into the wound, discovers the groove, and serves to guide safely the point of the knife: this point should be so directed as to enter the membranous part of the urethra precisely on *this side* of the prostate. The point being lodged in the groove and the cutting edge turned, not towards the lower angle of the wound, but *obliquely outwards towards the fixed point or insertion of the erector penis,* is made to glide in the groove of the staff to its very extremity, and as this extremity is in the bladder, every part through which it passes, namely, the prostate, the neck of the bladder, and its orifice, is divided by an oblique incision. If this incision did not extend to the neck of the bladder (exclusively or inclusively) it would not be sufficient, as the intention of the operation is to incise those parts which are dilated, or (if I dare say so) torn asunder by the apparatus major(*a*)." It is a strange and rather humiliating fact, that, rejecting the authority of the

(*a*) Or, as it is now termed, the Marian operation.—*Parallele,* p. 136.

contemporaries, pupils, and assistants of Cheselden, we accept as the best account of his operation the statement of a foreigner, who never saw him operate.

It would appear, then, that the lateral operation (like many of the inventions which have conferred the greatest benefits on mankind) was not, *as it is now performed*, the invention of any individual; that it was originally designed by Frere Jacques, and received its first improvement from Merry(*a*); was still further improved by Rau; and finally was brought to perfection by Cheselden, in 1720: and it may be recorded amongst the curiosities of surgical literature, that the earliest, and, to this day, the best account of Cheselden's lateral operation is to be found in Le Dran's *Parallele*, published in the year 1730.

The principle of the lateral operation, then, is now clearly understood and universally admitted, and the only difference among operators relates to the means of performing the second or internal incision, by which it is proposed to make an opening of sufficient size into the bladder, throught he membraneous part of the urethra and prostate gland, or, as Cheselden well expresses it, "through that part of the urethra which lies *beyond* the corpora cavernosa, and *in* the prostate gland."

The principal means which have been devised to effect this object are,

1. The same knife, of whatever form, by which the external incision has been made.

2. The straight, grooved director and lithotome of Le Dran. Daunt's knife and director, with improvements by Messrs. Dease and Peile.

3. A beaked knife; that is, a knife, whether bistoury or scalpel, the point of which is blunt, and prolonged into a beak, which being held by the urethra in the groove of the staff, guides the cutting part safely into the bladder.

4. The *bistourie cachè* of Frere Cosme.

5. Cutting gorgets of various constructions.

(*a*) See a tract published in Paris in 1700.

6. The double *bistourie cachè* of Dupuytren, for the bilateral section of the prostate.

7. The operation, by dilatation, of Bresciani de Borsa.

1. The scalpel, as employed by Cheselden, is very generally used by experienced operators; and in boys under fifteen years of age it is, perhaps, the most convenient instrument that can be employed, but it should not be concealed that it is an instrument which can be safely handled only by those who to a natural dexterity add great experience in the use of instruments. In the deep perinæum of an adult, the hand of an operator, while making the incision of the prostate, is removed to a great distance from the point of the knife, the whole blade of which, as well as a portion of the handle, is concealed in the wound. This distance is continually increasing with the depth of the incision, so that it becomes exceedingly difficult for the operator so to regulate the pressure on the point of the knife against the staff as shall at once prevent it from slipping out of the groove, and yet permit it to glide smoothly into the bladder. Again, nothing short of great experience can teach him how much pressure he should apply to the edge of the knife to make the "drawing cut" outwards (which is to connect the internal with the external incisions) of the required extent, neither so small as to oppose too great an obstacle to the extraction of the stone, nor so large as to divide the base of the prostate and its aponeurotic covering.

A just appreciation of these difficulties has, ever since the introduction of the lateral operation, led surgeons of the greatest eminence to devise various means of effecting the internal incision, by which the dangers and difficulties attendant on the use of the scalpel might be lessened, if not altogether avoided.

2. Le Dran seems to have been the first to perceive that when the groove of the staff was laid bare in the perinæum, a straight and blunt director might, in the first instance, be more safely introduced into the bladder than a knife; and

that a long-handled knife, or "lithotome," as he terms it, guided by this director, might effect the division of the prostate gland more safely than the scalpel. He accordingly described his "new method" in his Treatise on the Operations (page 235), which he states that he had not discovered at the time he published his *Parallele*,—and gives a plate of his director and lithotome. He thus describes his mode of using the instruments: "This done," (that is, the external incision being made, and the groove of the staff laid bare), "I take a large director, the end of which is made with a beak like that of a gorget, and, conveying this beak on the blade of the knife into the groove of the staff, I draw the knife out. I then slide the beak of the director along the groove of the staff into the bladder, and I withdraw the staff by turning the handle towards the patient's belly. The following circumstances will sufficiently satisfy us that the director is introduced into the bladder; first, if it strikes against the end of the staff which is closed; secondly, if the urine runs along the groove. I next feel for the stone with this director, and, having found it, endeavour to distinguish its size and surface, in order to make choice of a proper pair of forceps; after which I turn the groove towards the space between the anus and the tuberculum ischii, and, resting it there, convey a bistoury along the groove, the cutting blade of which is half an inch broad, and three-quarters of an inch long. I continue the incision in the urethra made by the knife, and entirely divide the prostate gland *laterally*, as also the orifice of the bladder; and I am very certain that the introducing the use of these two instruments, which are not employed by other lithotomists, does not prolong the operation a quarter of a minute, but rather shortens the time, both by facilitating the dilatation which is afterwards to be made with the finger, and by rendering the extraction of the stone more easy. The bistoury being withdrawn, the groove of the director serves to guide the gorget into the bladder; I then introduce my fore-finger along the

gorget (which is now easily done, as the prostate, being divided, does not oppose its entrance), and with it dilate the passage for the stone, in proportion to the size which I discover it to be. This dilatation being made, I withdraw my finger and use the proper forceps."(*a*)

This is the operation of which Cheselden speaks in such high terms; and if it had no other claim to our attention than that it was the operation of Le Dran, and approved by Cheselden, it would be deserving of the consideration of every lithotomist(*b*). But it has in this country a peculiar claim to our regard, for it contains the germ of an operation originating with Mr. Daunt, of this city, in 1750, and subsequently brought, by successive improvements in the instruments, suggested by the late Mr. Dease and by Mr. Peile, to a very high degree of excellence. The following is Mr. Dease's account of the method of operating with Mr. Daunt's instruments.

"The patient being properly secured on the table, and the staff introduced and held by an assistant, the operator makes his external incision, as described by Sharp and Bromfield, or as if he was to use the cutting gorget. Having opened the membranous part of the urethra, the operator introduces the conductor along the groove of the staff into the bladder; he then withdraws the staff, and takes the conductor in his left hand. Having introduced his two forefingers into the handle,

(*a*) "M. Le Dran, I believe, was the first that contrived other instruments besides the knife, more effectually to divide the prostate gland and neck of the bladder. Although Mr. Le Dran's method and instruments were not generally used, and at present, I believe, never practised, yet he has great merit in making the first advances towards improving the lateral operation."—*A comparative View of the different Methods of cutting for the Stone.* By William Dease. Dublin, 1782.—p. 120.

(*b*) I cannot deny myself the gratification of giving in this place Mr. Cheselden's testimony as to the merits of Le Dran, a testimony as creditable to the liberality of the one as to the merits of the other. "There are very few passages in the foregoing sheets in which I have ventured to differ from M. Le Dran; whenever I have, it has not been without suspecting my own judgment; and I confess I have never read a book of surgery from which I have learned so much as from this."

he places his thumb over the bow of the instrument, which gives him an entire firmness as to the rest of the operation. He then lateralizes the conductor by the pronation of his wrist, and takes the lithotome and engages it on the crest of the conductor, and finishes the operation by running the lithotome along the crest: having arrived at the extremity of the conductor, he withdraws the knife along the crest, and then introduces the forceps on the conductor, which withdrawn, he proceeds to the extraction of the stone."

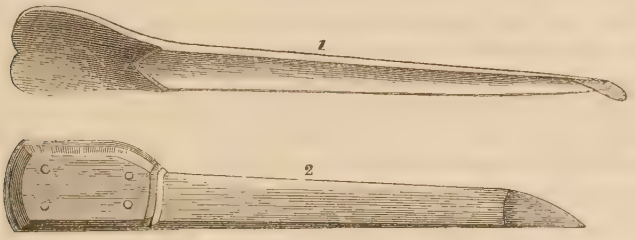
Mr. Peile, in an excellent paper, published in 1807, in the first and only perfect volume of the Dublin Medical and Physical Essays, describes the improvement which he has made in these instruments, and adds some highly important directions respecting the mode of using them. He lays great stress on the necessity of the close application of the conductor to the arch of the pubis while passing the lithotome, a circumstance not noticed by Mr. Dease, yet one on which the safety of the operation mainly depends. A neglect of this precaution in passing the conductor must almost necessarily lead to the wounding of the rectum. I have often seen Mr. Peile operate by this method, and I have also employed it myself; and so impressed am I with its value that I would strongly recommend its adoption, *in the case of adults*, by all persons who are inexperienced in the operation of lithotomy—and all operators must, at first, be inexperienced; and if I now had occasion to operate on an adult with a deep perinæum, and a large stone, it is probably the mode of operating I should adopt in preference to any other.

I may just observe that Mr. Daunt's operation differed in a material particular from Le Dran's. Le Dran, influenced, no doubt, by early impressions, retained the great error of the Marian operation, in commencing his external incision too high, and not continuing it sufficiently low. The consequence was, that although he cut with his lithotome the parts that were dilated, or rather lacerated, by the "dilators," in the

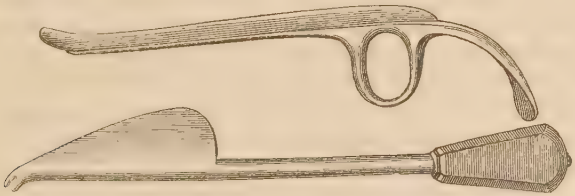
Marian operation, he still had to extract the stone through the narrowest part of the lower outlet of the pelvis.

Mr. Daunt's, on the contrary, was a true "lateral operation;" beginning his incision where the Marian incision ended, he opened the membraneous part of the urethra with the scalpel, leaving the bulb untouched, and, guided by his straight director, completed the section of the prostatic urethra, and of as much of the surrounding gland as was necessary, by a lateral incision, made securely by his sliding lithotome(*a*).

(*a*) [The invention of the straight director and its first practical application is undoubtedly due to Le Dran, who, it would appear, used it between the time of the publication of his "*Parallele*," in 1730, and the date of the eighth edition of his "Operations in Surgery," in 1749. These are the figures of the director (fig. 1) and bistoury (fig. 2) of Le Dran, reduced to one-half the natural size.



Mr. Daunt, a distinguished surgeon in this city, contrived (according to Mr. William Dease, in 1750) the conductor and lithotome figured below, which is represented one-third the natural size.



This director, like that of Le Dran, was passed into the bladder by running its beaked extremity along the groove of the staff, which was then withdrawn, and the lithotome, with its extremity sliding on the ridge of the director, pushed forwards into the bladder. Mr. Dease informs us, in the work quoted in the text, that these instruments were considered in his day the best that had been invented for obviating the disadvantage of the

3. The beaked bistoury of Mr. T. Blizzard, and the beaked scalpel of Sir Benjamin Brodie, are, no doubt, safe and excellent instruments in the hands of such operators as their inventors, and in any hands they are safer than the mere knife, and infinitely preferable to any form of gorget. Held in the groove of the staff by the beak, the cutting part is safely guided to the bladder, and the operator has more control over the direction and extent of his internal incision than with the gorget.

4, 5. The *bistourie cachè* of Frere Cosme, and the cutting gorget of Sir Cæsar Hawkins, have fallen into disuse, at least in

cutting gorget, generally styled that of Sir C. Hawkins, at that period much used in this country, and of "securing to the operator a certainty of dividing the membraneous part of the urethra, prostate gland, and neck of the bladder, without putting his dexterity to any severe trial."

In 1754 these instruments, with a description of them, were sent to the celebrated Morand, who presented them to the Royal Academy of Surgery, in Paris, which body appointed a committee to decide on their merits; and the *Academie des Sciences* published an account of them in their Transactions. In the following year M. Audouillé, secretary to the French Academy, communicated to Mr. Daunt the favourable opinion which that body entertained of his new invention, but suggested the propriety of making the point of his instrument somewhat broader and more convex, and also removing the shoulder at the base of the blade. Some years after, but during, we believe, the life-time of Daunt, the elder Dease, in whose hands the correspondence on this subject was placed, acting upon the suggestions of the Parisian surgeons, modified the instruments by giving the blade of the lithotome a different curve, and turning the beak of the conductor slightly downwards. With these instruments it is well known that Mr. Dease operated with great success in this city, and published an account of them, together with very accurate plates, in the work already alluded to, at page 11. Notwithstanding this he has been accused by John Bell, upon the authority of Mr. Liston, of having concealed his mode of operating. See American edition of Liston's Surgery, by Dr. Mütter, p. 527.

This mistake, we are, however, able to correct upon the most unquestionable authority. Sir Philip Crampton writes to us as follows: "I had the advantage of serving my apprenticeship in the hospital of which Mr. Dease was senior surgeon, and I have seen him operate for stone repeatedly in the presence of hundreds, and he never made any secret of his mode of operating; latterly he used Cheselden's staff and knife only. He gave a public course of operative surgery annually, at the College of Surgeons, and demonstrated his operation with staff and knife with the utmost

this country. Both are subject to the objection which applies to all methods by which it is proposed to regulate the extent of the incisions by the dimensions of the instrument, or by any mechanical action rather than by the hand of the operator. The cutting gorget, pushed firmly against a large and dense prostate, connected to the inner surface of the pubis by rigid aponeuritic and muscular fibres, will make an incision in the gland of a very different extent from that which will result from the same degree of pressure against a small and soft prostate connected to the pelvis, as such a gland generally is, by a loose

minuteness, always dissecting the parts immediately after the operation, so as to exhibit to the class the direction and extent of his incision. It was also his custom to demonstrate his operation, of which he was, naturally enough, not a little proud, to all foreign surgeons who happened to visit Dublin, and, among the rest, I remember to have been present when he operated upon the dead subject for Gimbernaut the celebrated anatomist. Mr. Peile, Mr. Carmichael, and other surgeons now living, can bear testimony to what I have stated. I feel that it is due to the surgical profession at large, and to the memory of one of the greatest surgeons that this country has produced, to vindicate his character from a charge that would sink him to the level of the Colots and Raus; and I doubt if there be a man living who will read this vindication with greater pleasure than my excellent friend Mr. Liston."

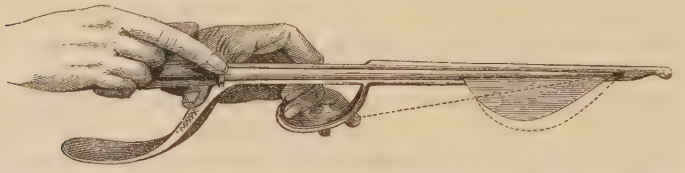
It is true that in early life, and before the publication of his work on the stone, Mr. Dease operated according to the method used at the Hotel Dieu; but Mr. Peile informs us that he has constantly seen him operate with the straight director and lithotome, but that he latterly preferred to operate with the curved staff and scalpel of Cheselden alone. We have the authority of Mr. Peile for stating that, so far from concealing his mode of operating, no man was more generous upon the subject than Mr. Dease, whom he states to be the most expert lithotomist he ever witnessed; but then, while he himself used the *scalpel alone* for cutting into the bladder, he recommended to others the employment of the lithotome.

With the instruments of Daunt, the largest calculus on record, weighing fifteen ounces and a half, was extracted, in 1773, by the distinguished Mr. Morres, formerly Surgeon to Mercer's Hospital in this city.

In 1807 Mr. Peile, one of the most eminent lithotomists in Great Britain, improved upon the invention of Messrs. Daunt and Dease, by substituting a groove in the director, instead of the keel which it formerly possessed, and adapting to the end of the lithotome one beak instead of the two which formerly traversed the crest of the director. From the engraving which accompanies the account of this improvement in the Medical and

cellular tissue, and a few pale and yielding fibres of the levator ani(*a*). In the first case you have a deep incision, nearly, or it may be entirely, dividing the gland through its whole substance; in the second you have a shallow nick, just marking the place where the gorget rested when it pushed the gland before it(*b*).

Physical Essays, we copy this representation of the instruments, and the mode in which they are to be used.



In 1824 Dr. Mütter published an account, at New York, of "New Modes" of performing the lateral operation of lithotomy, in which, says Mr. South, "after opening the membraneous part another staff is introduced upon the former, and with it a sickle-shaped knife, and in drawing the knife out, the neck of the bladder is cut into."—*Chelius' Surgery*, English translation, p. 583. In the Numbers of the Philadelphia Medical Examiner, for July and November, 1845, we read an account of a discussion carried on between two American professors, Drs. Elliot and Mattauer, regarding their respective claims to priority in inventing directors and gorgets (lithotomes), precisely the same in principle, and very closely resembling in shape, those of our countryman Mr. Daunt; and as the instruments are figured in the articles alluded to, there can be no doubt as to their form. In April, last year, we addressed a short communication to the editor of our esteemed cotemporary, the Examiner, in which we endeavoured to establish the claims of our countrymen, and figured the instruments of Daunt, Dease, and Peile, which communication was at once most generously inserted in that valuable periodical. In the forty-fourth number of the Edinburgh Monthly Journal Professor Syme has described a *prostotome* and straight staff or director, very similar in shape, and used in precisely the same manner, as those of Messrs. Dease and Daunt. Mr. Peile's instruments are still sometimes used in the Richmond Hospital in operating on adults.—Ed.]

(*a*) The *Prostaticæ* of Winslow.

(*b*) I do not know why Sir C. Hawkins should be considered as the inventor of the cutting gorget; his instrument is merely a modification or simplification of Mr. Bromfield's "double gorget," which was a blunt gorget surmounted by a cutting gorget (removeable at pleasure) "for t purpose of dividing the prostate, and, at the same time, dilating the wound." —See Bromfield's Surgery, Plate xiii. vol. ii.

6. The double *bistourie cachè* of Dupuytren, is, of course, twice as objectionable as the single *bistourie cachè* of Frere Cosme.

7. If, in the bilateral operation of Dupuytren, the section of the prostate, and neck of the bladder, appears, in the opinion of British surgeons, to be carried too far, the operation of Bresciani, of Verona, seems to err in the opposite extreme, for in it the whole of the opening into the bladder, after the division of the membraneous part of the urethra, is made by dilatation. As Bresciani's work has not, so far as I know, been translated into English, and is not, I believe, in any public medical library in this kingdom, I venture to give a short abstract from it, in which his mode of operating is described.

The operation is so completely opposed to the notions of British surgeons, and seems at the outset liable to such grave objections, besides the physical impossibility of applying it in a great number of cases of a certain description, that I should not have thought it necessary to include it among the modifications of the lateral operation, were it not that Signor Bresciani is Surgeon-in-chief to the great hospital at Verona, is a professor of surgery of high character in Italy, and that he has given an account of one hundred cases in which he and Signor Manzoni have performed the operation with success(*a*).

The operation of Bresciani is a truly lateral operation, so far as the external incision is concerned. He opens with a small, lancet-pointed, double-edged scalpel, the whole of the membranous part of the urethra, so far as to expose the groove of the staff to the extent of about ten lines(*b*), in doing which, he says, it may (must?) happen that the apex of the prostate is also

(*a*) Signor Bresciani is the author of several practical works on surgery; that to which allusion has been made in the text is his "*Saggi di Chirurgia Theorico-Practica*," published at Verona in 1842, and noticed in the April Number of the Medico-Chirurgical Review, last year.

(*b*) This exceeds by four lines the length of the membraneous part of the urethra in the adult.

cut. He then takes hold of the handle of the staff, and, passing his left fore-finger into the wound, feels the groove exposed; and whereas others would pass some form of gorget through the prostatic portion of the urethra and neck of the bladder, he only introduces his finger, being certain it never can make a false passage, as it is always in contact with the staff. He takes care, nevertheless, not to pass his finger along the groove, because he should then thrust it against the internal or posterior angle of the wound, and then against the great bulk of the prostate. Instead of following the groove, therefore, which he scarcely touches, he passes his finger along the right side of the staff as regards the patient, and carries it gently, and without any obstacle, into the bladder, and completes the dilatation by moving the finger about in a semicircular manner, so as to effect a still greater dilatation of the prostatic urethra and neck of the bladder. He then introduces the forceps on his finger, and extracts the stone in the usual manner.

The objections to this operation are too obvious to be here insisted on. It is, perhaps, enough to say, that *in these countries* an indurated prostate is made of tougher materials than to yield to the pressure of the strongest finger without being partially divided by the knife, or partially torn by a blunt instrument; and we here also meet, at times, with perinæums so deep, that the longest finger cannot reach the cavity of the bladder. It is plain, therefore, that in such a case the operator cannot pass his forceps into the bladder without lacerating the prostate, unless he does something more than divide the apex of that gland. Great interest, however, attaches to Signor Brescian's operation, as it shews that in a large number of cases a very slight incision of the prostate gland will be sufficient to enable the operator to effect such a dilatation of the neck of the bladder as will enable him to complete his operation(*a*).

(*a*) In 1727 John Douglas, the distinguished anatomist, proposed, as a means of relieving persons afflicted with stone (and who were not in a condition to be operated on by any of the methods then in use), to establish a fistulous opening in the membraneous part of the urethra, through which

In England the nearest approach to the Verona professor's mode of operating is that practised with so much success by Mr. Liston, who, in common with all successful lithotomists, depends mainly upon his fore-finger for dilating a "very limited incision;" he takes care, however, that the knife, always preceding the finger, shall divide just so much as it is "indispensable" to divide, and no more. I had the gratification of seeing Mr. Key operate last summer with his straight staff(*a*) and scalpel, and I observed that he used the fore-finger for dilating the internal incision, but performed that most important part of the operation with the greatest gentleness; the staff was committed to the hands of an assistant. The stone was extracted from the patient (a child six or seven years of age) in less than a minute, and it was impossible for the operation to be performed in a more masterly manner.

In truth, I believe it may be stated as a general proposition, that all attempts to render operations more safe by shifting the responsibility of the executive part, from the operator to his instruments, have been attended with but indifferent success: nor can this be wondered at when it is considered that it is, in fact, but an attempt to transfer to the means, the intelligence which should guide them.

the urine could be easily evacuated, or a probe passed into the bladder to push back the stone when it closed up the orifice of that viscus; and then inquires, "whether it is not possible to dilate the artificial fistula with tents, gradually increased to such a width that we may easily pass a pair of forceps into the bladder, with which the stone, when small, may be extracted, and when large or of an irregular figure, broken, and the pieces extracted at different times." Here we have the very germ of Lithectacy. Douglas quotes in his paper a case where this method was adopted, with complete success, by M. Collet, in which no less than ten stones were extracted. The operation of Bresciani holds a somewhat middle place between the lacerations of Marianus and the gradual dilatation of Douglas.—See Philosophical Transactions for 1727; and Willis on the Stone.

(*a*) See a Short Treatise on the Section of the Prostate Gland in Lithotomy, by Aston Key. London, 4to. 1824.

For this and for other reasons, operations are usually considered to be well performed whenever the plan is simple and intelligible, and when the execution is rapid; but simplicity and rapidity, although excellent qualities in an operation, may be carried too far: they are always carried too far when they compromise in any, even the slightest degree, the safety of the patient. It is, no doubt, a striking and admirable thing to see a difficult and dangerous operation, such as lithotomy, safely completed in less than a minute, and with no other instruments than a staff, a scalpel, and a forceps; but the capacity to perform this feat is a natural gift, improved by long practice. Now, with the highest natural surgical talents, with the best possible intentions, and with the strongest desire to excel, a surgeon may want the opportunity to practise; he may not have the advantage of having an hospital, or, residing in a remote part of the country, he may not have the means of cultivating practical anatomy; he may, nevertheless, be called upon to perform the operation of lithotomy, and his declining to operate, or his operating unsuccessfully, might severely effect his professional prospects; it must, therefore, be a matter of infinite importance to a surgeon so circumstanced, as well as to the persons of whom he has the professional charge, that the success of the operation should be rendered as little as possible dependent on that kind of manual dexterity which is to be acquired only by long practice.

Now it may be useful to inquire, what are the difficulties and dangers which attend the purely operative part of lithotomy? They are, in the first place, hæmorrhage from wounding the internal pudic artery, or one of its large branches close to the trunk, by turning the edge of the knife too much *towards* the ramus of the pubis, and making the incision too deep in that direction; or by dividing the artery of the bulb in laying bare the groove of the staff. Secondly, wounding the rectum by turning the edge of the knife too much *downwards* from

the ramus of the pubis, and cutting too deeply in that direction. Thirdly, the point of the instrument (knife, lithotome, gorget, or director) going at a tangent off the curve of the staff, and passing between the bladder and rectum. There are other dangers which relate to the mode of introducing the forceps, the grasping and extracting the stone, but these are more easily avoided, and, as they are not connected with the cutting part of the operation, need not be touched upon here.

Now I trust that I shall be able to shew that the operation may be performed in such a manner as, in a great measure, to avoid the dangers inseparable from the knife, when used in the ordinary way. There is no novelty in the plan of the operation, and the instruments are, with scarcely any alteration, those in common use.

I merely propose a mode of using the straight, blunt-pointed bistoury, which renders that instrument perfectly safe, by which the operator divides the prostate gland and neck of the bladder by an incision which shall be of an uniform size,—never so deep as to cut the base of the gland, and yet always sufficiently so to admit of dilatation to any required extent. The principle, then, of the operation is twofold: first, to avoid, in effecting the second, or deep incision, the danger arising from the escape of the instrument, whatever be its nature, knife or gorget, from the groove of the staff. Secondly, to effect, without the risk of hæmorrhage, an incision of the prostate, which shall, *in every case*, be just sufficient, and no more, to allow the fore-finger of the operator to pass through it into the orifice of the bladder. This done, it is well known to every practical lithotomist that the rest of the operation, so far as the opening into the bladder is concerned, is most safely effected by dilatation, those cases, of course, excepted, where the great size of the stone requires for its safe extraction the division of the prostate on both sides. But the proposed method of using the bistoury is equally applicable to such cases.

The peculiarity of this operation consists in the mode of

using the bistoury, which is made to cut on the principle of the *wedge* instead of that of the *saw*, the cutting edge being pressed down upon (not drawn over) the fibres of the part intended to be cut. Every surgeon must have observed that in cutting the soft parts of the living animal body the resistance to the knife is not uniform; muscular, aponeurotic, and cellular texture, giving different degrees and kinds of resistance; some structures flying, as it were, under the edge of the knife, and others bending, or stretching before it. In removing a tumour, for instance, we observe its adhesion to the surrounding parts is firm only at certain points, and those points often at a considerable distance from each other. These, whether of condensed cellular or fibrous texture, if made tense by moderate traction, fly under the edge of the knife, and then, division liberates a large surface of the tumour. In the perinæum, where the same variety of structure exists in a remarkable degree, the same variety of resistance at different points may be observed on passing the finger through the wound leading to the bladder, or in extracting a large stone. Now, in lithotomy, it is confessedly an object of the greatest importance to effect a sufficient opening into the bladder with the least possible cutting, but also with the least possible laceration of its neck. This object, it appears to me, may be obtained by the following mode of proceeding. When the external incision has been made in the usual direction, and to the usual extent, the point of the scalpel, guided by the fore-finger, is to be gently pushed into the groove of the staff—the groove being laid bare to the full extent of the membranous part of the urethra—the blunt point of the straight narrow bistoury, here represented one-half

the proper size(*a*), which, like Sir A. Cooper's hernia knife,

(*a*) [The knife at present used by Sir P. Crampton, Mr. Cusack, and several other surgeons in Dublin, is not exactly that recommended by Tho-

is squared to the extent of half an inch, is to be introduced into the groove of the staff, *in which it is completely concealed*, and from which it cannot escape without tearing quite through the prostate. Pioneered, then, by this blunt portion of the blade, the cutting part, still concealed in the groove of the staff, is lodged safely in the prostatic urethra, while the blunt portion enters the bladder. The point being then firmly pressed against the portion of the staff that is lodged in the bladder, the operator gives a slight degree of lateralization to the blade, and slowly depresses the wrist of the right hand, so as to bring the heel of the knife down to the lower angle of the external incision. The whole wound thus forms a triangle, the base of which is at the integuments, and the apex in the bladder. One side is formed by the staff above, the other by the bistoury below. The staff is then withdrawn, and the knife being held steadily in its lateral position, with its heel still depressed, the operator slowly slides the fore-finger of his

left hand along its back, as shewn in the above wood-cut, *as far as it will go;*—in adults, in whom the perinæum is not usually

mas Blizzard, whose instrument (according to Mr. South) had "a beak inclined at an angle towards the right side of the blade."—See notes on Chelius' Surgery, p. 590. The knife used by Mr. Cusack in the same manner as that described by Sir P. Crampton is a little broader in the blade. The bistoury of Mr. Keith bears some resemblance in shape to that figured in the text, but it is used in a totally different manner, and with a different intention.—Ed.]

deep, the top of the finger will pass into the bladder, and in general come in contact with the stone; but even in the deepest perinæum the top of the finger will reach to the orifice of the bladder. The operator has thus completed the main intention of the operation, as it is understood in these countries; that is to say, he has made an opening of sufficient size to pass his fore-finger quite into the bladder, in a vast majority of cases, but quite into its neck in all cases, and that has been done with no more division of the parts by the knife, than was necessary to effect the dilatation of the neck, *without its laceration.* It is plain that when dilatation is combined, in this way, with cutting, there can be no laceration, for all the fibres that oppose a resistance to the stretching, (and that would, from their structure, be torn rather than yield, if the stretching were increased), are cut by the perpendicular pressure of the edge, and, what is most to be desired, no other fibres are cut, for the elastic or dilatable parts, when deprived of the support of the inelastic fibres, yield before the wedge-like pressure of the finger.

The opening into the bladder is then, *in all cases*, and without reference to the state of the prostate, exactly sufficient to receive the fore-finger of the operator, *plus* the blade of the bistoury, the back of which being partly buried in the pulp of the fore-finger, does not exceed the one-sixteenth of an inch in breadth. The opening being thus made, the bistoury is slowly withdrawn along the trajet by which it entered the bladder. The operator, if he has reason to think he has a large stone to deal with, presses the edge of the knife gently downwards and outwards, so as to enlarge the incision along its whole course. A blunt and somewhat conical gorget(*a*) is then passed on the

(*a*) The blunt gorget of Cheselden without a beak. Mr. Keith, in his excellent practical essay in the Edinburgh Medical and Surgical Journal, very justly remarks, when describing the advantages of the gorget, that it lies "safely in the bladder, and, the staff being withdrawn, becomes the actual conductor, guiding the forceps without violence safely into the bladder;" but then it should be borne in mind, that his instrument, though called a *blunt* gorget, had a "*tearing edge*," with which the prostate was divided or lacerated,—while that used in this city is merely a dilator and director.

finger into the bladder, with its extremity slightly inclined towards the lower fundus, while the whole instrument is depressed towards the rectum, a manœuvre which greatly facilitates the seizing and extracting the stone.

There is nothing that is striking, and little that is new, in this mode of operating; nothing to find favour with those who attach importance to the effect which an operation produces on the bystanders, but it has the double recommendation of being at once safe and of easy execution; on this account it may not be unworthy of the attention of those who have yet to acquire that dexterity in operating with the scalpel, which great experience alone can supply. I might easily support my views respecting the superior safety of operating in this manner with the blunt-pointed bistoury, by a reference to my own personal experience (spread over a period of thirty-five years), but I much prefer resting the claims of the operation to the confidence of the surgical profession on the testimony of others. The mere fact that it is now practised, in preference to any other mode of operating, by many of the most eminent surgeons, and successful lithotomists, in Ireland, persons of whose impartiality there can be as little doubt as of their judgment, is the best proof that can be adduced of its efficiency(*a*).

M. Louis, more than sixty years ago, proposed that "when the incision of the prostatic neck of the bladder was not sufficiently made by the gorget, a straight, narrow, and blunt-pointed bistoury should be introduced on the index finger of the left

(*a*) While these sheets were passing through the press I assisted Mr. Cusack at an operation of lithotomy at Steevens' Hospital. He operated in the manner described in this paper, and extracted in a very short time from a youth about seventeen years of age, a stone measuring in its long diameter two inches and a-half, and weighing three ounces two drachms.

[In America cutting gorgets are the instruments principally employed in lithotomy; but Professor Mussey, of Cincinnati, uses, we understand, a straight, probe-pointed, narrow bistoury, somewhat in the manner described in the text. But this gentleman employs the bilateral incision in the extraction of the stone in all cases.—Ed.]

hand into the wound "*Afin d'opérer sur ces parties un débridement secondaire, que le toucher dèrigerait jusqu'au degré jugé indispensable.—Dict. de Médecine*, art. *Cystotomie.*" This proceeding, adopted by Saucerotte, and highly approved by Dupuytren and Begin, contains the germ of the operation which I have ventured to recommend, but it differs from it in this material particular, that in the operation in question the blunt-pointed bistoury is the *principal*, and not the *accessary*, and that the finger is introduced upon the knife, and not the knife upon the finger, and on this depends the *whole value* of the operation, for if the knife be introduced upon the finger to dilate the wound (insufficiently made by the gorget, as recommended by M. Louis), the finger must have already reached the neck of the bladder, which consequently needs but little "*débridement;*" but if the finger be introduced upon the knife, the knife, cutting a passage before it, enables it to arrive at a point which it could not otherwise reach without causing laceration.

LITHOTOMY IN WOMEN.

The facility with which the female urethra can (under certain circumstances) be dilated, and the ease with which calculi can be broken down in the bladder, would seem to render lithotomy, in this sex, an operation which surgeons would seldom be called upon to perform ; this, however, is far from being the case, for lithotrity is applicable to a very limited range of cases only, and in numerous instances, the dilatation of the urethra cannot be effected, *to any considerable extent*, without more pain, and even danger, than is attendant on lithotomy itself. In many, perhaps in the majority of instances, calculi, particularly in young women, are formed on extraneous substances introduced into the bladder. Wire hair pins, toothpicks and needle cases, are among the articles which have been detected as forming the nuclei of stones extracted from the female bladder. Lithotrity is, of course, inapplicable to such cases, as the nucleus would probably remain behind after the

stone, which was formed on it, had been pulverized and discharged. If the patient be under puberty, or if she have never borne a child, dilatation, to such an extent as to admit of the extraction of a large calculus, or of an extraneous substance of a considerable length, will be attended with such intolerable pain, and such alarming constitutional symptoms, as to render it in the highest degree inexpedient to resort to this mode of treatment. But in women who have borne children, and particularly if they be advanced in life, and of a lax fibre, the urethra seems to partake of the dilatability of the genital organs, which is developed by parturition, and in such subjects, dilatation of the urethra, to any required extent, may be safely effected in a few hours, or sometimes even minutes, by Weiss's dilator. There is, however, a class of patients for whose relief lithotomy (in the present state of our knowledge) offers the only means of relief. But perinæal lithotomy, in whatever manner performed, if the stone be large, is said to entail the miserable consequences of incontinence of urine(*a*). Such, at least, is the opinion of two of the most distinguished and experienced surgeons of the present age. Now I am enabled to state that an operation on the principle of that recommended in this paper for the removal of calculus from the male, can be applied to the female, even when the stone exceeds an ounce and a half in weight, with perfect safety, and without entailing the deplorable consequence of incontinence

(*a*) "When the stone is large I suspect there is no method of removing it entire from the female bladder without an incontinence of urine, to a greater or lesser extent, being a consequence of the operation."—*Brodie's Lectures on Diseases of the Urinary Organs.* 1842.

"Il est évident que la cystotomie chez les femmes est toujours moins dangereuse que chez l'homme. Mais si elle ne menace pas immédiatement la vie, elle expose devantage, du moins par tous les procédés qui appartiennent à la méthode périnéale, à l'incontinence d'urine. Aussi, doit-on renoncer à l'incision de l'urèthre dans quelque direction qu'on la pratique, excepté pour les calculs peu volumineux, qui sortiraient presque spontanément."—*Dupuytren, Dictionnaire de Médecine et de Chirurgie Pratiques.* Tom. xvi. p. 130.

of urine even in the smallest degree. I lay no claim to originality in suggesting this operation; the principle has long been established, and has been acted upon by Sir B. Brodie and Mr. Liston. The *principle* is the combining dilatation with incision. Sir B. Brodie says he tried a method of operating, which, he was "informed, had been adopted by an eminent provincial surgeon, and which had not been followed by incontinence of urine. The operation consisted in making an incision of the urethra with the *bistourie caché*, so arranged that the cutting edge should not project more than about one-sixth of an inch; "then, drawing out the bistoury, with the cutting edge turned directly upwards," he endeavoured to divide the membrane of the urethra immediately below the symphisis pubis, without allowing the incision to extend into the contiguous cellular tissue. The next step of the operation was to introduce Weiss's dilator, and expand the urethra so as to allow the introduction of the finger, and then of the forceps, into the bladder. The dilatation was readily effected in a few minutes, and the stone was extracted. The patient, he adds, did not suffer from actual incontinence of urine; she could not, however, retain it for more than two hours.

According to Mr. Liston, "the best mode of extracting foreign bodies from the bladder is to widen the urethra gradually by means of the screw dilator, then by the introduction of a straight blunt-pointed knife, to notch the neck of the bladder slightly towards each ramus of the pubes, so as to divide the dense fibrous band encircling it; the dilatation is continued, and, in a few minutes, the finger can be admitted. The stone can then be readily grasped by a pair of forceps, and it is astonishing how large a body may be removed by these means. Incontinence of urine may follow the operation, from the distension of the sphincter of the bladder, but in a few weeks this will, generally, cease"(*a*).

(*a*) Liston's Practical Surgery, fourth edition, p. 525.

The mode of carrying out the principle of combined dilatation and incision which I have adopted differs, in some respects, from that recommended by those distinguished surgeons, and unquestionably has proved completely successful in the cases in which it has been employed by Mr. Cusack and myself(*a*).

The instrument I employ (represented in the accompanying engraving) affords a convenient means of applying to the female urethra the combined action of cutting and dilating in such a way, that just so much of the urethra, *and no more*, shall be cut as will put it in a condition to be dilated to the required extent, without subjecting it to laceration. The instrument is

to be used in the following manner. The apex of the cone is to be introduced into the urethra, and pushed gently forward until it meets with some obstruction from the tightness of the urethra; the cutting blade is then to be raised to the extent of one-eighth of an inch by pressing the thumb on the stop at the heel of the instrument, and the dilator is to be slowly pushed forward. Those fibres only which, undivided, would resist the dilatation, give way before the edge of the knife(*b*); the

(*a*) Dubois was the first to recommend, and Callot to practise, the superior incision of the female urethra.

(*b*) [This instrument, the dilating part of which is a modification of that invented by Mr. Weiss, is four and a-half inches long in the conical dilating portion, and an inch and three-fourths in circumference at its thickest part. The sides are made of whalebone, and the knife-blade, which has been added by Sir P. Crampton, lies quite concealed within the upper side, except when raised by the spring attached to the stop. As this stop is a screw, the portion of it below the spring can be increased or diminished at pleasure, so as to regulate the extent of blade to be exposed.—Ed.]

dilatation then advances unchecked until it opens a sufficient passage for the finger into the bladder; the finger is then withdrawn, and replaced by the forceps, when the stone, or extraneous substance, is extracted in the usual manner. By this mode of proceeding I lately succeeded in extracting a stone nearly an inch and a half in diameter, formed on a double wire hair pin, three inches and a-half in length. The calculous matter was removed in fragments as they separated from the pin; the pin itself, one limb of which was bent, and firmly embedded in the neck of the bladder, was not discovered at the first operation, but was removed by a second, which was performed two or three weeks afterwards; on both occasions I was assisted by Mr. Cusack. Six weeks after the last operation I had an opportunity of ascertaining *to a certainty* that the young lady was able to retain her urine for eight hours together. Mr. Cusack operated with the same instrument on a young woman in Steevens' Hospital, for the removal of a metallic needle-case, three inches and a-half long. It was necessary before introducing the forceps to pass the finger, and use considerable efforts to dislodge the extraneous substance, which had become impacted in the lower fundus of the bladder: nevertheless, the woman left the hospital eight or ten days after the operation, having perfectly recovered the retentive power of the bladder.

The effect of The Cutting Dilator, used as above described, is to cut only the external orifice of the urethra, and about one inch and a half of the internal membrane lying next to it, while the orifice of the bladder remains uncut; in this respect its action is different from that of the *bistourie caché*, which from its construction, must, in the first place, cut the neck of the bladder, however slightly, and afterwards incise the internal membrane of the urethra through its whole length. In Mr. Liston's method, the neck of the bladder is slightly notched on both sides, while the orifice of the urethra is only dilated

by the screw dilators ; time and experience must determine which of these three methods is the least likely to be succeeded by incontinence of urine.

I remain, dear Sir, your's sincerely,

Philip Crampton.

Merrion-square, 15th December, 1846.

Art. II.—*The History of a Case of Aneurism by Anastomosis in the Cavity of the anterior Naris ; with Remarks.* By Samuel Wilmot, M. D., President of, and Professor of Surgery to, the Royal College of Surgeons in Ireland, and one of the Surgeons of Dr. Steevens' Hospital.

The history of this case, which is remarkable from the very unusual position of the disease, is as follows. Mary Moore, aged 30, of delicate appearance, was admitted into Steevens's Hospital on the 2nd of June, 1845. She states that when ten years of age, after leaping from a height, she was seized with a profuse flow of blood from the left nostril : it recurred several times for about a week, and was at length stopped by surgical treatment. She says that about four years and a half ago she observed a small tumour, not larger than a pea, situated on the inside of the left ala nasi. The formation of this tumour was preceded and accompanied by a good deal of pain, which was not confined to that spot, but occupied the entire left side of the nose ; she also experienced a sense of fulness and tension about that side of the head, and in a few months the tumour increased so much as to attract the notice of her friends. She was now sent to me from the country by a friend, who conceived the tumour to be a polypus. Upon examination I found the tumour, which was about the size of a small olive, attached to the inner surface of the ala of the left nostril. It was of a dark blue colour, soft, smooth, and equal on its surface, and upon pressing it an obscure pulsation could be felt in it. The coro-

nary artery of the lip and the lateralis nasi pulsated strongly, and appeared to feed the tumour. She complained of headach, and a sense of weight and fulness about the left side of the nose. She remained in hospital at this time but for a very short period, having been obliged to return home for her confinement; but after the lapse of about four months she returned, and was again admitted. During her absence the tumour had increased in size, and the arteries connected with it had undergone an enlargement; the pulsation also, which at first was rather indistinct, was now very evident. She says that during her labour, which was difficult and tedious, all these symptoms were much increased.

In consultation with Mr. Cusack and Mr. Colles, it was agreed to try the effect of nitrate of silver applied to the interior of the tumour. To accomplish this, the tumour was punctured with a cataract needle, and through the punctures a small probe, coated with the nitrate of silver, was introduced. A rapid flow of blood followed each operation, but was soon stopped by pressure. The caustic was applied in this manner three or four times, and during the intervals astringent lotions and pressure were employed. This plan brought about some reduction in the size of the tumour, but it was not of long duration; in a very short time it acquired its former size, or perhaps became rather larger; the headach, also, became very great, with intense throbbing, not only in the tumour but round the entire left side of the head and face. In this unrelieved state she was again obliged to leave the hospital to see one of her children who was dangerously ill; but when her child had recovered she returned, after an absence of nearly half a year. The tumour was now observed to have undergone a remarkable change in size and shape; it was much larger, and had altered its oval shape to a round form. It now bore some resemblance to a large hæmorrhoid; it filled the anterior cavity of the left nostril, and extended a little beyond its margin; its free surface lay against the septum, and completely blocked

up the passage. The tumour preserved the same bluish colour and smoothness on its surface, and its pulsation could now be seen as well as felt. All the circumjacent arteries were enlarged, the lateralis nasi was dilated to the size of a crow-quill, the coronary artery of the same side was also greatly enlarged, and pressure on either of these arteries commanded the pulsation in the tumour. She complained at this time of want of sleep from the pain and throbbing in the head; she also stated that vision had been rather dull in the left eye for some short time back.

Finding that all the symptoms were rapidly increasing, and that the several plans of treatment adopted were unsuccessful, we resolved on perforating the tumour with the actual cautery. The circumstance which led to this plan of treatment was the successful application of the instrument in the hospital to hæmorrhoidal tumours by Mr. Cusack, as related in the last Number of this Journal. To my son, the resident surgeon, who took an interest in the case, and paid close attention to it, the carrying out of this plan of treatment was confided, and it was perfectly successful. The operation consisted in perforating the tumour in two distinct places with a nail-shaped cautery iron. This operation was repeated six times, at intervals of fourteen days between each. After every application the tumour swelled, became painful, and in about three days pus was observed to ooze through the openings. By following up this plan the tumour gradually diminished, and the enlarged arteries lessened. At the expiration of three months she was discharged from hospital perfectly well. There was then no trace of the tumour, the lateralis nasi artery could not be felt, and the other arteries which had been enlarged were restored to their natural size.

Since the hæmorrhage which occurred when the patient was a girl, before any tumour appeared, no bleeding took place from the nose through the entire progress of the case, though

such an occurrence might naturally have been expected, considering the nature of the tumour, and the excited condition of the arteries connected with it. Latterly, the extent of the tumour could not be accurately ascertained, in consequence of its filling up the anterior cavity of the nostril. I was very desirous to know how far the neighbouring parts were involved, for at one time the case wore rather an alarming aspect. The severe headach, sense of fulness and throbbing about the left side of the head and nose, with the dulness of vision in the eye of that side, led me to apprehend that the tumour had formed some distant and deep-seated connexions with vessels coming from the cavity of the cranium; but the manner in which the symptoms subsided under the last plan of treatment proves that the tumour was circumscribed, and that the vessels connected with it were superficial.

The actual cautery has been, of late years, a most useful instrument in the hands of judicious and careful surgeons. Indeed, I think that every case successful through the agency of this instrument should be made known, in order that the public may become more familiar with its name and acquainted with its utility, at the same time that some of the formidable ideas connected with it might be removed. It is very natural that the idea of a red-hot iron about to be applied to a living, perhaps to a highly sensitive part, should excite in the mind of a patient great horror, nay, even cause a decided opposition to its application; but the practitioner may remove these fears; he can declare, with perfect truth, that, in reality, this mode of destroying diseased parts is safer and milder in its effect than the employment of strong caustics. The pain produced by the actual cautery is of much shorter duration than that caused by the use of this application, and, what cannot be said of any caustic, except, perhaps, of the chloride of zinc, its effects are limited, and do not extend beyond the part to which it is applied.

Art. III.—*Remarks upon the Removal of loose Cartilages from the Joints.* By Robert Liston, F.R.S., Surgeon to the University College Hospital, London.

[Communicated in a Letter to Sir Philip Crampton, Bart.]

My dear Sir Philip,—The patient about whom you inquire made a very satisfactory recovery, and, but for an attack of that wicked enemy, the gout, would have been on foot within a few days after you were so good as to visit him with me. He had suffered very great inconvenience from the presence of a solitary cartilaginous body in his right knee-joint for a considerable number of years; but latterly it had more frequently arrested his progression, and threatened to throw him down. It was very freely moveable, and could occasionally be brought to the outer side of the joint, where it might be distinctly enough felt, with little else interposed but the skin, the fibrous tissue, and the synovial capsule.

I had, as you will recollect, two days previously, performed a modification (and a very considerable modification, too) of the operation proposed some years ago by M. Goyrand, of Aix, from all accounts a very accomplished surgeon. Of him M. Vidal (de Cassis), in treating of affections of the joints, says very truly: "*Il a prouvé de nouveau que le talent ne reste pas stérile même loin des centres qui l'alimentent.*" M. G. has proposed an operation for the removal of these bodies "*en deux temps*," and he sets about the first step of it by fixing the foreign body. Having a large transverse fold of skin pinched up, he plunges a very straight, sharp-pointed bistoury under this, and directs the instrument so as to divide the capsule upon the foreign body. This is, if possible, forthwith pushed out of the joint into the subcutaneous cellular tissue. Some days afterwards he cuts the cartilage out by simply making a "*boutonniére*" through the skin.

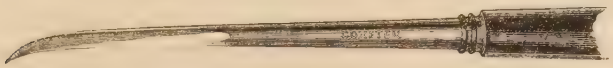
This is, undoubtedly, a vast improvement upon the old operation of pulling aside the skin, cutting this and the deeper tissues freely upon the foreign body, extracting it if possible, and then permitting the covering to resume its place so as to render the wound so far indirect. Here there was always a risk of the edges inflaming, of their not uniting, and of a suppurating track being thus established in connexion with the synovial cavity. Hence inflammation of the joint, destruction of the cartilages, and a cure(?) by anchylosis, or amputation of the member. This proceeding I practised long ago in some three or four instances; in the last, the patient nearly lost his life, and with difficulty was enabled to preserve his limb. I should be very sorry to repeat the process.

M. Goyrand's operation has, so far as I know, been but seldom attempted either on the Continent or in this country. It is very difficult of execution, and is likely enough to fail, even in the hands of surgeons in the habit of performing many and trying operations. In the case of a young woman in the hospital some years ago, I failed most signally, by following M. Goyrand's method, in removing the foreign body from the joint.

Since then I have seen right to modify the proceeding, and have succeeded most perfectly and satisfactorily in four cases. In the case of a young gentleman, I removed no less than five of those bodies at various times. I shall now shortly, according to your desire, state the method I adopted in those cases, and in that of Colonel L., the patient whom you saw, and you cannot, I should say, have forgotten his very ingenious demonstration of the proceeding.

The moveable body, then, is secured in the outer and upper part of the synovial bag, if possible, by the pressure of the points of the fingers and thumb of one hand. The knife, the blade of which is delineated of the full size, is made to penetrate the skin by directing its point perpendicularly to the surface,

and at somewhat more than an inch below the substance to be acted upon. By a lateral motion of its blade the integument is



freely separated from the subjacent parts, so as to make a bed for the lodgment of the cartilage, somewhere over the space between the tendon of the biceps and the vastus externus. The point of the instrument is then directed to the foreign body, and made to impinge upon it, so as to divide all the interposed tissues and the synovial capsule *freely*, somewhat in the direction of the limb. The instrument is then withdrawn, and the assistant places the point of a finger on the minute opening. The knife is again introduced towards the outer side, and so managed as to complete a pretty large crucial incision of the immediate coverings of the body to be removed. This done, nothing remains but to pass the point of the instrument under the mass, to entangle it, to withdraw it from the joint, and to carry it into the bed previously prepared for it. A bit of plaster is put on each of the openings, and strict rest of the limb enjoined for a few days. There is no occasion, in my opinion, for farther interference. In one case, to satisfy the patient and his friends, one of several foreign bodies, after having been out of the joint for some time, was cut out from under the skin. The patient unfortunately had a hæmorrhagic diathesis, and the wound kept on bleeding for some days, so as to cause a good deal of alarm. I did not then fully appreciate the powers of the gallic acid in arresting those passive oozings. The wound at last healed, and he is now contented to carry several other cartilages lodged under the skin, in the vicinity of the joint, and which do not there cause the slightest annoyance.

I may, in conclusion, mention that the cartilaginous bodies I have thus extracted have been of various sizes and shapes ;

some the size of beans, and others much larger; some pretty globular, whilst others again have been very flat, roundish, and at least three-quarters of an inch in diameter.

Believe me, my dear Sir Philip,
Always your's faithfully,
Robert Liston.

London, November 11, 1846.

Art. IV.—*Observations on the Epidemic Dysentery and Diarrhœa, which lately appeared in Kilkenny.* With Cases. By Joseph Lalor, M. D., L.R.C. S. I., Physician to the Gaol, Lunatic Asylum, and Union Workhouse of Kilkenny(*a*).

The prevalence of bowel complaints in this locality, during the spring of last year, was so great as to form a remarkable feature in the medical constitution of the season. At the Dispensary, the Fever Hospital, and the Workhouse in particular, much attention and anxiety was excited by the frequency of diarrhœa and dysentery, occurring either alone or as complications or sequences of other, and especially of febrile diseases. Viewed in connexion with the reasonable apprehension that existed in the public mind, of an approaching scarcity of sustenance for the mass of the people, this epidemic created in those who observed it, gloomy forebodings, which, happily, were not, then at least, fulfilled. From my own knowledge, and from what I have heard from my medical brethren, I do not consider that insufficiency, or unsoundness of food, have been the cause of those bowel complaints, in many instances. I have no doubt that some cases could be traced to this cause, which would now be operating still more injuriously but for the wise and humane precautions that have been

(*a*) [This paper was forwarded for publication in June last, but want of space caused the delay of its insertion till the present time—Ed.]

taken to avert famine. In very many cases, however, insufficiency, or unsoundness of food, could not have been to blame. This was the case amongst the rich, and amongst the more comfortable of the labouring classes, many of whom were attacked; and it was the case also amongst the habitual inmates of the poor-house, and amongst the convalescents in the fever hospital. It is, however, a remarkable fact, that this epidemic occurred during a sudden transition period in the food of the community. A short time previous to the appearance of diarrhœa and dysentery, in the union workhouse, Indian corn meal had been suddenly substituted, in place of potatoes, for dinner. The convalescents in the fever hospital must have undergone a change of diet twice, at least, within a short period; and amongst the poor of this city, in general, other food was being substituted for potatoes, gradually as regarded the community, but suddenly as regarded individuals. Supposing however, a sudden change of diet to have been one cause of bowel complaints, many reasons, which it is unnecessary to particularize, forbid the conclusion that it was the sole cause of this epidemic. Other causes, and, amongst them, atmospheric influences, probably, also operated.

The cases of diarrhœa that came under my care in the workhouse, during the months of February, March, and April, 1846, were very numerous, but, with few exceptions, they were sufficiently mild to be treated as externs in the body of the house, and they made favourable recoveries. Eight cases only, as entered on the books, were treated by me, and seven of them were cured without difficulty, under ordinary treatment. The eighth case, a broken-down old man of seventy years of age, having been brought into hospital moribund, lingered about thirty hours, and then died, but he sunk rather from old age, and a general break-up of the constitution, than from any recent disease, and I consider, therefore, that his death cannot fairly be attributed to diarrhœa; but his disease, as so reported, is entered on the hospital books, and, therefore, here noticed. From

these premises the conclusion fairly follows, that simple diarrhœa, as observed during the epidemic at the poor-house, was not an unmanageable or dangerous disease, when submitted to timely treatment. The following remarks will, however, shew that many cases ran into, or were mixed up with the more severe disease of dysentery, under which head, and not under the head of diarrhœa, I have consequently classified them. And as I do not know of any sure criterion, by which it can be foreseen whether or not a case of diarrhœa will merge into dysentery, I think that too much vigilance cannot be exercised in watching every alteration of symptoms denoting such a transition, and to direct the treatment accordingly. The epidemic dysentery, in the union workhouse, has been a less frequent, but a much more formidable disease than the epidemic diarrhœa. The first case of dysentery that came under my care, occurred on the 3rd of January (somewhat anticipating the outbreak of the epidemic), and terminated fatally on the 18th of February. Between this latter date, and the 27th of April, twenty-six additional cases came under my care, making altogether twenty-seven cases treated by me in hospital, besides several other cases of less severity, as extern patients, but of which I possess no accurate record. The following is a general history of the leading features of the disease, as observed at Kilkenny.

Rigors, heat of skin, or headach, seldom preceded or accompanied the attack of dysentery, which was sometimes ushered in by diarrhœa, and at other times was at once pronounced by small, frequent stools of bloody or slimy mucus, accompanied by tenesmus. Bilious vomiting was occasionally an early symptom, and thirst and anorexia constantly marked the invasion of the disease, but as it advanced, the thirst often ceased, and the appetite sometimes returned. Thus, in two of the fatal cases, the appetite, after having been lost, returned, and continued pretty good, up to the time of death. In some cases, emaciation could scarcely be said to occur, and in general it was less than might be expected. In connexion with these

last-mentioned facts, it is worthy of special notice, that in two *post mortem* examinations, one on the body of a patient of my own, the other of a patient of my colleague, Dr. Cane, I found the lacteals full of chyle; proving that chylification and absorption had remained active up to death. The tongue was almost always foul, generally coated with a white fur, and sometimes thick and cream-like ; at other times, the tongue was small, brownish, and typhoid. The pulse of those under adult age was generally quickened, and at all ages it was so when any febrile disease co-existed; otherwise, the pulse was generally natural in frequency, or, in the old, sometimes slow. It was never full or bounding, but often weak and thready. The temperature of the surface and extremities was generally below the natural standard ; and when the patients were allowed to get out of bed to stool, a death-like coldness, and severe rigors, sometimes set in. The skin sometimes felt clammy and greasy, and sometimes dry and harsh. Tenderness on pressure over any part of the abdomen was rarely experienced, and when it was, its usual seat was over the liver. Bed sores occurred in only one case; and the skin round the anus was chafed and reddened in a few instances. The general appearances of the urine I did not satisfactorily ascertain ; in one fatal case, dysuria, and frequent micturition, preceded death. The intellect generally remained undisturbed, unless in the fatal cases, and even in those it failed only at the near approach of death. The distinctive characters of the disease were, of course, the appearances which the stools presented, their frequency, their scantiness, and the painful and exhausting tenesmus with which they were passed. Tormina was seldom present. The appearances of dysenteric stools are practically well known to the profession, and do not, therefore, require description ; if, indeed, description could define characters so varied and so complicated. At the commencement of some cases the stools were of blood, or mucus, simply or conjointly ; whilst in other cases, as I have already mentioned, they bore the cha-

racter of the discharges in diarrhœa; but as the disease advanced, combinations appeared, such as blood, slimy mucus, shreds of lymph, ropy and clay-like deposits, vitiated bile of various colours, from light to deep orange or green, black, brown, and yellow, &c., mixed up with the residium of the ingesta, and forming frothy and very fœtid stools of various degrees of consistence. A very constant and remarkable appearance in the dejections seemed to be caused by the admixture, more or less pure, of a peculiar sort of bile of a bright orange colour, holding in suspension numerous scales of a yellowish colour, circular form, and brilliant lustre, not unlike portions of mica in shape, size, and brilliancy. Bile of a similar character was found in the gall bladder of those whose bodies were examined after death. I can remember few of my cases in which I have not observed the presence of this bile in the discharges, at some period or other. Its presence was not, however, a permanent appearance; sometimes the dejections were loaded with it at the very outset of the disease, and previous to the discharge of any blood or mucus; in other cases they became so after a few bloody or mucous stools had been passed, as well as at various other periods of the disease. As I had no opportunity of submitting these scales, or the bile, to a chemical examination, I cannot say exactly what they were, but I presume that they were colesterine rather than any new morbid product. Others may, probably, find no difficulty in determining their composition from the description I have given of them. It is a curious circumstance which I noted in some of the cases, that during the period of convalescence the stools became whitish, clayey, and evidently deficient in bile, notwithstanding that mercury, in the form of *hydrargyrum cum creta,* had been recently exhibited; the discharges were, however, of the natural solid consistence. William Reade, aged 90, whose stools were of this character during convalescence, died, as I considered, of a decay of nature, after he had been perfectly free from dysenteric symptoms for fourteen days.

His discharges, up to the period of his decease, had never regained their natural colour ; and on a *post mortem* examination the gall bladder was found half full of bloody serum and small grumous clots. The cases which came under my notice were not acute either in their symptoms or progress, unless sometimes that recovery speedily resulted from treatment. Of the fatal cases, one did not apply for relief until a late period of the disease, and the other two experienced no check to their symptoms from the treatment adopted. These three cases, therefore, afford a good opportunity of observing the natural course of the disease when unchecked or unmodified by treatment. Two of these patients, though very old and broken down in constitution, did not die, one till the nineteenth, the other till the twenty-sixth, day of the disease ; whilst the third, who was younger, and possessed of more stamina, held out till the forty-eighth day. I never observed any natural effort towards a cure or crisis in this dysentery ; on the contrary, its tendency, if unchecked by art, was either to a fatal termination, or to gradually wear itself out, the patient being in the mean time brought to the very verge of the grave. In some cases, however, the power of an enduring constitution successfully held out until recovery took place from the most aggravated stage of the disease, when the symptoms indicated that ulceration of the bowels had actually occurred. This lesion I considered to be indicated by the persistent aggravation of the original symptoms for a long period ; the appearance of shreds of membrane and bloody lymph in the stools ; dry, harsh, and scurfy skin ; retraction of the abdomen ; quick, contracted pulse ; brown, typhoid tongue ; and considerable emaciation. When the bowels have become ulcerated, a cure, of course, can only be effected by cicatrization of the ulcers. The case of Reade, already referred to, will not only exhibit the mode of cure in actual progress, so as to leave no doubt, I should think, of its possibility, but it will also shew that ulceration of the bowels may exist without any dysenteric symptoms being present. In the fatal cases, death

seems to have occurred from the exhaustion produced by the long-continued irritation of the disease, and the constant painful and harassing calls to stool.

In the treatment of this epidemic at the Kilkenny Workhouse I found mercury, combined with opium, of more value than all the other remedies I tried, together. These remedies were opium, acetate of lead, chalk, logwood, catechu, nitrate of silver, soda, turpentine, matico, Dover's powder, infusion of rhubarb, opiate suppositories and injections, and blisters to the abdomen. Opiate injections I found a useful adjuvant in allaying tenesmus. I did not bleed or apply leeches in any instance, as the debility that existed in the majority of the cases would not have warranted any such drain on the system. There is only one other medicine, besides mercury and opium, which I would expect to find of considerable value in the treatment of purely dysenteric symptoms, and that is ipecacuanha, the efficacy of which I should like to test in some cases where mercury and opium might happen to fail, as one is led to form a very favourable opinion of its power in dysentery, both from the reports of East Indian practitioners and from a consideration of the pathology of the disease. Considering that biliary derangement is one of its chief causes or concomitants, and having proved the value of emetic doses of ipecacuanha in dangerous cases of icterus, as recommended so highly by Dr. Corrigan, I cannot avoid, from theory alone, feeling a strong prepossession in favour of this medicine as a remedy in dysentery, believing that it exerts a most salutary influence over the secretion of the liver; but the mercurial treatment proved so efficacious that it was not considered advisable to deviate from it.

On a numerical comparison of the terminations of my twenty-seven cases, with reference to treatment, I find the following results. One was received into the house moribund, and died in a few hours, no time being afforded for any treatment beyond the ineffectual trial of restorative stimulants. Five cases were treated without mercury, and of these two

recovered and three died. The remaining twenty-one cases were treated with mercury, and of these one (W. Reade) died under the circumstances already referred to, and to be fully detailed in the subsequent history of the case. Eighteen recovered perfectly. One is convalescent at the present moment, but still not entirely restored to his strength, having undergone a very long and dangerous illness. One has sunk into a hopeless state of chronic dysentery and pulmonary consumption; and one suffers still from occasional looseness of the bowels, and has symptoms of incipient tubercles of the lungs. I would wish to notice particularly, that of the three latter cases one is an idiot, and the other two are persons under adult life. Two of the deaths occurring under non-mercurial treatment were in cases where recovery could not well have been expected under any treatment; and I am not sanguine enough to say that they would have terminated differently had mercury been administered to one of them at any period, or to the other when the case came under my care. But, leaving these out of consideration for the present, the non-mercurial treatment presents a mortality of three in five, whilst the mercurial treatment gives eighteen cures, one death, and two cases of doubtful result, out of twenty-one cases: according to the light in which Reade's case is viewed, the actual mortality, under the latter mode of treatment, is one, or nothing. Thirteen of the cases treated by mercury were of adult age, as were all those treated non-mercurially. I have already stated that, *quoad* the dysentery, Reade was cured, or in progress of recovery, until he sunk from decrepitude; and I consider that his case tells much in favour of the mercurial treatment, and not at all against it. The mercurial treatment has been followed by a successful result in every case, without exception, in adult life, and I think that an examination of the individual cases will lead to a conclusion equally in favour of this medicine as the numerical results I have given. The cases of dysentery treated by mercury, under adult life, were eight in number,

and presented six recoveries, and two other terminations, the unfavourable nature of which I have already detailed. The dysentery, in non-adult life, did not seem to be as much under the control of mercury as it was in adult age; at the same time mercury appeared to act more favourably on this disease, even in early life, than any other medicine which I tried. Besides the trial I have made of mercury in the twenty-one cases the results of which I have enumerated, I have given this medicine in other cases of dysentery in private practice, and amongst the poor out of the workhouse, with equal success.

Calomel was the preparation which I used in the beginning, and my first intention was to push mercury, in all cases, so far as to affect the gums. But I soon found, as I conceived, that this was unnecessary, and I gave up the practice, the more readily as ptyalism was anything but desirable in the class of patients I had generally to deal with, viz., those beyond, and those under adult life, and very often persons with impaired or scrofulous constitutions. Latterly, I generally gave two grains of *hydrargyrum cum creta*, with one of dried soda, and half a grain of opium, to an adult, four times a day; and I consider that the mercury, in this form, acted more safely than either blue pill or calomel. Often, after a few doses of this combination (but, sometimes, not until after its use for two or more days), the stools completely lost their dysenteric characters, convalescence speedily followed, and I discontinued the medicine. In other cases, the dysentery was replaced by diarrhœa, which mercury did not control, but which was generally easily restrained by the ordinary astringent, tonic, or sedative treatment. When the result was not so speedily favourable, I continued the mercury until the gums became affected, and, sometimes, with the desired effect of complete cure, or the substitution of a manageable diarrhœa, in place of dysentery. In another, and the smallest class of cases, and chiefly in the young, no improvement took place, or such as was slight or temporary, even under the protracted exhibition

of the mineral; and equally whether the gums had or had not become affected, and symptoms of ulceration of the bowels set in. In this latter stage of the disease, I think that mercury, generally speaking, can do no good, and I usually gave acetate of lead and opium; but the chief point of treatment, in those cases, seemed to me to be the maintenance and improvement of the powers of the constitution, by the judicious administration of nutriment, moderate stimulants, and tonics, so as to give time for the cicatrization of the ulcers by the natural process, over which medicines appear to exert but little direct influence.

Next to the use of mercury, the proper regulation of the diet all through a case of dysentery affords the most important assistance to a cure, and one without which all others will fail. The usual rule, that all the nutriment should be of the mildest and least irritating quality, should be strictly enforced; and even when great debility renders the use of solid animal food, or broths and wine, necessary, they should be administered with great caution; but, with this restriction, all these will sometimes be found of great service, especially in cases of weakly and protracted convalescence, and in ulceration of the intestines. It may be said that the mode in which I generally administered mercury was too inert to produce the beneficial results which I have attributed to it. But having, as I believe, fairly tried opium and soda alone, without success; and having witnessed their good effects, when combined with mild doses of mercury, passing, as it were, under my eyes from day to day, I cannot avoid considering the mercury, with chalk, as the active beneficial ingredient in the formula I have employed. Not only in those under and those over adult life, and in scrofulous and impaired constitutions, is the preparation to be preferred; but I can add, that in a few cases of dysentery which I have met with in robust constitutions, and in adult age, its effects were equally satisfactory. And if biliary derangement be an early and a marked change from the state of health in dysentery (as the character of the stools, and the appearance of the

bile found in the gall bladder after death, afford evidence that it is), there seems to be no reason for disbelieving in the virtues of moderate doses of mercury in this disease, as they are in keeping with its ordinary and well-known effects; and I believe that it is through its influence on the secretion of the liver, and not by its direct power of controlling inflammation, that, sometimes at least, mercury acts beneficially in dysentery; and I look upon the main features of this disease to be more in favour of the supposition that the ulceration of the bowels which occurs in it is rather the result of their secondary irritation by morbid products, than of a primary inflammation. The *post mortem* appearances in this epidemic may be learned from the subjoined notes of fatal cases; to these are added the notes of a few cases in which recovery took place, and of which I could give a much larger number, did necessity require, or space permit.

M. Fitzpatrick, aged forty-seven, whilst under treatment for bronchitis, was attacked, on the 18th February, with diarrhœa, and was ordered an astringent mixture of chalk, catechu, and logwood.

22nd.—The stools have become more frequent, scanty, and tinged with blood, and are passed with tenesmus. There is thirst, anorexia, and furred tongue, but no quickness of pulse, or increase of temperature on the surface of the body. Ordered an enema, with forty drops of laudanum, and also two grains of calomel, with half a grain of opium, in pill, every fourth hour, and barley-water for drink.

25th.—Gums are affected by the mercury; dysenteric symptoms have ceased since morning, but the bowels are still loose; calomel omitted; rice diet; ordered, two grains of opium, with six of dried soda, as also a mixture of eight ounces of infusion of cascarilla, with bicarbonate of soda, and tincture of hyoscyamus, a drachm of each: of this mixture, two table-spoonsful were ordered to be taken thrice daily.

26th.—A few streaks of blood re-appeared in the stools, but

on the 27th he was convalescent, and experienced no relapse: he was discharged well, March 9th.

Thomas Horan, aged 74, admitted into hospital with diarrhœa, on the 11th March; stools large, frequent, watery, and muddy-coloured; tongue foul; no constitutional disturbance; no tenesmus. He was ordered a starch and laudanum injection, and two grains of opium, with eight of dried soda, divided into two pills. The pills and enemata, with the ordinary astringent mixture of the hospital (chalk and logwood), a blister to the iliac region, tincture of hyosciamus in the infusion of cascarilla, and the decoction of matico, were the remedies used up to the 26th. Under this treatment the dejections became somewhat more consistent, and the bowels would remain quiet for several hours together, but then the diarrhœa would recur with undiminished force, and prevent all rest or sleep. At other times, after a good night's rest, three, four, or six stools would be passed early in the morning, in quick succession, and then an interval of quiet would follow. The discharges also became occasionally tinged with blood, slimy, or loaded with bright, orange-coloured scales, like particles of mica, and they were accompanied by tormina and tenesmus; the strength continued, and the appetite remained good; the tongue was thickly coated, and there was great thirst.

26th. He was ordered two grains of mercury with chalk, one grain of dried soda, and half a grain of opium, to be taken four times in the day.

April 1st. Stools have gradually become more consistent since last report, and are now as thick as ordinary stirabout(*a*), free from blood, but of a bright orange tinge; the tongue is clearing; the gums are slightly affected: ordered to omit the mercury. 2nd. Stools of a clayey colour: ordered four grains of blue pill, with half a grain of opium, to be taken at night.

(*a*) This may seem a homely expression, but it is one that will be understood by all our Irish readers.

5th. Bowels rather loose; a table-spoonful of the astringent mixture ordered after each fluid stool. 13th. Discharged well, having been convalescent during the previous week.

Timothy Walsh, aged 7, a weakly child, just convalescent from measles, and consecutive croup and bronchitis, was seized with diarrhœa on the 15th March.

18th. Stools, which had been at first copious, watery, frequently very fœtid, and of a clayey colour, have become more frequent and scanty, and consist of slimy mucus, streaked with blood, and are passed with severe tenesmus. He was ordered rice diet, an injection of starch, with four drops of laudanum, and to take three times a day a grain of Dover's powder, with an equal quantity of *hydrarg. c. creta.*

20th. Powders of dried soda, and Dover's powder, were substituted this day, for those ordered on the 18th. Subsequently, the remedies tried were opiate injections, infusion of rhubarb, with carbonate of soda, a blister to the left iliac region, which part was painful on pressure, decoction of matico, and acetate of lead, to the 3rd April, when the use of the chalk and mercury, with Dover's powder, was resumed. Up to this date there was no improvement in the dysenteric symptoms; there was constant thirst, and complete loss of appetite for solid food, and as the fluid nutriment taken was quickly evacuated from the bowels unchanged, emaciation proceeded rapidly, and the last degree of weakness and exhaustion was speedily produced. His surface and extremities were constantly cold; the skin became dry and harsh, and the countenance pale and sunken.

From the period when he resumed the mercury, which, with the acetate of lead, he continued to use up to the 15th of April, he improved steadily, and was convalescent on that day. He had no return of the complaint.

Patrick M'Evoy, aged 31, admitted to hospital March 23rd, with dysentery of three weeks' standing. Ordered fever diet, rice, and wine, an opiate enema, and two grains of opium and eight of dried soda, in pills. At the evening visit he was

ordered half a grain of opium every four hours, and his wine was increased in quantity.

24th. Perpetually tortured by calls to stool, where he sits for a long period, passing but a very small quantity, and with pain, tormina, and tenesmus. The discharges are like chopped spinach, mixed with blood, and bright orange bile, containing micaceous-looking scales. The pulse is small, weak, and but little quickened; the countenance sunken, the extremities cold; the intellect perfect; the tongue dry, brown, chapped, and contracted; and there is thirst, anorexia, and total loss of rest from the unceasing calls to stool. Remedies as in last report.

25th. Continues as yesterday. Ordered an enema, with thirty drops of laudanum, and pills of opium and nitrate of silver.

26th. Yesterday, in addition to the symptoms he now complains of, he had frequent and difficult micturition, and is at present weaker. The catheter was introduced, and about half a pint of high-coloured urine drawn off. Ordered five grains of acetate of lead and thirty drops of laudanum in an injection, and a repetition of the pills of nitrate of silver and opium.

27th. Is weaker; pulse rapid, and he raves occasionally. Pills were repeated, and five grains of acetate of lead, in solution, were prescribed four times daily. Two ounces of whiskey allowed him in addition to his former allowance of wine.

28th. He died quietly, apparently exhausted.

Upon examination, the liver was found of a deep red colour, mottling the yellow tissue, its substance softened, and every where breaking down readily under the finger into a glutinous mass; gall bladder full of bright, orange-coloured bile, loaded with scales of colesterine, like particles of mica; the lining membrane of a dark red colour, and having its entire surface closely netted over with innumerable blood-vessels. The upper portion of the intestine presented nothing remarkable, but that the same description of orange-coloured bile as was found in the gall bladder adhered to its

mucous coat throughout. From the cœcum down to the rectum the mucous coat of the intestines was abnormally vascular, thickened, and ulcerated. The ulcers were of various sizes, from that of a small millet-seed to that of a shilling; they were irregular in shape, and their edges not elevated, or surrounded by a vascular zone, as is usual in ulcerations the result of ordinary inflammation; they resembled rather irregular abrasions of the mucous coat, as if produced by some corrosive substance, and they left the muscular fibres dissected and strongly marked. The lungs and kidneys were healthy: the head was not examined.

H. Carroll, aged 42, a weakly female, just convalescent from modified small-pox, followed by febrile purpura (not purpura hæmorrhagica), with an infant on her breast, and labouring under subacute bronchitis, was attacked with diarrhœa on the 25th March. The stools were copious, bilious, thin, and frequent; the pulse quick; tongue foul; and there was thirst and confusion of intellect. Ordered an astringent mixture.

26th. Stools more frequent, small, dysenteric, and passed with tenesmus; tongue dry, brown, and coated; pulse rapid and shabby. Ordered a grain and a half of blue pill, with an equal quantity of dried soda, and four grains of Dover's powder, to be taken in pills thrice daily.

27th. Stools frequent, in other respects remaining as yesterday. The pills formerly ordered were changed for others containing two grains of *hydrargyrum cum creta*, with half a grain of opium each, one to be taken four times daily; six ounces of wine, rice diet, and a blister to the chest, were prescribed at the same time.

29th. The stools more feculent, otherwise pretty much as at last report. Dried soda was added to the pills, and the quantity of mercury with chalk was decreased to a grain in each pill.

30th. Stools feculent, untinged with blood, but still frequent, and accompanied by some tenesmus; countenance much

improved ; tongue cleaning ; thirst less ; intellect clear ; gums smartly touched by the mercury. Pills omitted, and six grains of Dover's, with three of aromatic powder, ordered to be taken three times a day.

April 1st. Convalescent, but weak. On the 10th and 11th of April she had a return of diarrhœa, with sickness of stomach (but no dysenteric symptoms), brought on by indiscretion in diet. This attack was, however, easily subdued, and she was again convalescent on the 14th, and discharged from hospital perfectly well on the 29th of the month.

William Reade, aged 90, admitted to hospital April 3rd, with dysentery of about three weeks' standing ; had thirst, loss of appetite, feeble and indistinct pulse, cold surface and extremities, extreme emaciation ; great tenesmus, calls to stool almost incessant ; sittings very much prolonged, sometimes passed in ineffectual strainings, sometimes with the discharge of scanty stools of a slimy and bloody nature ; tongue dry, brown, and crisped, and intellect incoherent. Ordered fever diet, four ounces of wine and broth, and to take four times in the day, a powder consisting of two grains of *hydrargyrum cum creta*, with a grain and a half of dried soda, and half a grain of opium. April 7th. Dysentery has nearly ceased.

8th. Dysenteric symptoms have completely disappeared, but extreme debility continues. Only one stool this day, small, thin, and a little coloured with bile ; stomach irritable, and he vomits a chalk-coloured, ropy fluid. Ordered two ounces of whiskey, in punch, and the powders to be omitted.

10th. The vomiting abated, but bowels loose, stools quite chalky, fluid, and without any trace of bile, but not copious or frequent, and no tormina or tenesmus. Astringent mixture ordered after each stool.

13th. The looseness of the bowels has completely ceased, and he is now convalescent.

26th. No return of purging since 13th, and is at present completely free from all symptoms of dysentery or diarrhœa,

but is bed-ridden from old age and debility, which promise shortly to terminate his life. He has been for some days in a stupid, dozing, childish state, and is very feeble, and extremely emaciated. When first ordered to hospital he seemed to have but a few hours to live. He died on the 27th.

Post mortem examination, three days after death: liver mottled white and deep red; somewhat soft. About half a dozen ulcers, small, superficial, and covered over by a thin film, as if cicatrizing, in the mucous membrane of the upper portion of the intestines; about a dozen roundish ecchymosed spots, not unlike purpura, were observed in the same portion of the tube, but not in the same site (under its peritonæal covering). They occurred singly, and had a very minute terminating twig of the mesenteric vein running into each. A few lacteals, full of chyle, were also observed. Some larger and deeper ulcerations than those in the upper intestines, occupied the mucous membrane of the lower, from the cæcum downwards, and were about twenty in number; but they were neither so numerous nor so deep as in the case of M'Evoy, and like those in the upper portion of the tube, presented an appearance of cicatrization. None of them were larger than a three-half-penny silver coin. The gall bladder was half full of bloody serum and small grumous clots, and its lining membrane stained yellow with bile, which also stained and adhered to the mucous coat of the intestines. The large veins, and all the arteries, were empty, and the small veins were congested with grumous blood, at their terminations. The abdominal aorta was extensively ossified, and the kidneys congested; the upper intestines appeared to be contracted in three or four places, but could be readily expanded to the same calibre as the neighbouring portions.

John Hale, aged 70, of temperate habits, was admitted to the workhouse April 7th, and was sent to hospital on the same day. Had been ill with dysentery for three weeks before admission; had received no medical treatment previously.

His face was worn and haggard; surface cold; pulse small, slow, and feeble; stools scanty, frequent, bloody, and accompanied by tenesmus. He was ordered bread diet, with two extra pints of milk, four ounces of warm wine, and twelve ounces of meat, made into broth; and to take, thrice a day, two grains of *hydrarg. cum creta*, with one grain and a half of dried soda, and half a grain of opium. This treatment was continued till the 10th, when the dysentery ceased, but diarrhœa took its place: no mercurial action on gums, nor were the stools mercurial; astringent mixture ordered after each stool: the powders to be omitted.

April 13th. Has had no occasion for astringent mixture, and is now convalescent. His recovery and improvement under the above treatment were as rapid as they were unexpected. The pulse quickly became distinct, the surface warm, the countenance cheerful; the stools solid and natural in frequency and appearance, except that they were occasionally slightly streaked with blood. In twenty-four hours from his admission he considered himself well.

15th. On yesterday, about ten o'clock, P. M., he had a severe rigor, followed by vomiting and purging; the alvine evacuations were clay-coloured, and mixed with bright orange liquid bile, with flakes and scales of same colour, similar to those described in the former cases; the tongue is now coated with a thick white slime; thirst great; respiration laboured; countenance rather sunken; cough and mucous rales. No blood in stools; pulse of moderate strength; restless during last night; respiratory murmer pretty free, but mixed with bronchial rales. Ordered a blister to the chest, and to take two grains of *pil. hydrarg.*, with as much dried soda, and five grains of Dover's powder, together with saline effervescing draughts: omit meat, wine, and astringent mixture; substitute fever diet.

16th. Pulse eighty-four, small and weak; skin rather cold; no purging or vomiting since yesterday; tongue not quite so much coated, but small and fissured; less thirst; raved during

the night, and was restless; abdomen tympanitic; says he feels much better; passed one solid stool of a bright orange colour, containing micaceous-looking scales: ordered four ounces of wine, strong broth, and effervescing draughts to be repeated.

17th. Pulse seventy-two; three stools since morning, soft and clayey, otherwise as yesterday. Meat omitted, and fever diet, with rice, ordered; and also, Dover's and aromatic powders, with soda, of each two grains to be taken thrice a day.

18th. Does not rave; has been at stool only three times since yesterday; stools solid, but deficient in bile.

19th. Pulse seventy-two, moderate; tongue nearly quite clean and moist, but still cracked and fissured; appetite returned; thirst less: ordered bread diet, and one extra pint of milk. Convalescent: never had any relapse after this date, and on the 10th of May was discharged perfectly well.

Of the twenty-seven cases treated by me during this epidemic, eighteen were males, and nine females; eight were between three and thirteen years of age; one was 19; eight were between 35 and 52; nine between 60 and 80; and one was 90. Mercury was used in twenty-one of these cases, but affected the gums in but eight instances. Two cases passed into chronic dysentery and phthisis.

Art. V.—*Practical Observations on some Congesitive, Inflammatory, and Ulcerative Affections of the Uterus.* By Evory Kennedy, M. D., late Master of the Lying-in Hospital, Dublin. With coloured Plates and Illustrations.

A common inquiry, both within and without the profession, at the present day, is, how comes it that affections of the womb appear to occur so much more frequently now than formerly? The answer to this is, that they do not occur more frequently; but from the attention that has latterly been bestowed upon them, and the facilities that at present exist for their elucidaton, they

are now better understood, and their distinctive characters are beginning to be appreciated by those who study them. The consequence of this is, that many of those states of disease, formerly attributed to other causes, such as general debility, weakness, relaxation, nervousness, &c., or even to affections of remote organs, are now traceable to uterine lesions. The obscurity which hitherto enveloped their investigation, left us in ignorance of their existence, and led to their being ascribed to other than their real causes. These fallacies are, however, gradually giving way under the progress of analytic investigation, aided by the more general use of the speculum. As, however, the application of this instrument, in this country, must ever be limited, our progress shall be comparatively slow, unless those who have possessed peculiar opportunities of investigating these affections, give the results they have arrived at to the profession.

It is incalculable the amount of suffering and ill health which is, even at the present day, experienced by females, who have been treated ineffectually upon "general principles," and whom, after years of misery, the simplest local treatment rapidly restores to health(*a*).

The object of the succeeding observations is, the practical elucidation of some of the most striking of these affections, so as to convey to others, as briefly and simply as possible, the conclusions arrived at upon these subjects by the writer. But, as no written description can convey to the reader a just idea of the appearances, presented by morbid lesions, so as to enable him, without a most extensive field of observation, to distinguish them accurately when presented to him, we have been at some pains to remove this difficulty, by giving delineations, taken from the cases when under treatment. For their fidelity we can speak with some confidence. Most of

(*a*) See M. Chomel's case, reported by M. Gueneau De Mussy. Dub. Hosp. Gazette, March 1, 1845.

those not drawn by ourselves were executed under our inspection, by that admirable delineator of morbid structures, Mr. Connolly, nearly ten years since. They were prepared for the benefit of the class at the Lying-in Hospital, who then possessed an opportunity of testing their accuracy, by comparison with the cases under their observation at the moment. Multiplied observation of similar cases, in the period that has since elapsed, having satisfied us of their truthfulness, led to the supposition that their publication might prove acceptable to the profession.

If the practitioner ask for a rule as to the cases in which the use of the speculum is admissible, we should answer,—that must rest with his own judgment in each individual case; and while we feel convinced that no man would propose an operation, so revolting to every feeling of a delicate-minded female, and distressing to himself, unless absolutely imperative, we would also hope, that where such necessity existed, no physician intrusted with the life or health of his patient would shrink from having recourse to every available means which science affords, in the discharge of the trust confided to him.

In the majority of cases we find the usual posture in parturition,—lying on the left side, with the limbs drawn up to the abdomen,—and placing the patient so that the direct light will fall in the axis of the outlet of the pelvis, serves every purpose. A sheet, with an aperture, or slit, corresponding to the vulva, should envelope the person, and the head and shoulders should be placed low.

In primary examinations, where the object is to explore the interior of the vagina, as well as to evert the uterine lips, the use of the four-bladed speculum, is preferable. Subsequently, however, and where applications are to be made to the interior of the vagina or the os uteri, Ferguson's glass speculum, prepared by coating the glass with caoutchouc, having a layer

of quicksilver interposed (thus converting it into a reasonably good reflector, and rendering it more luminous), answers remarkably well.

Whenever the os is displaced and difficult to catch in the field of the speculum, the expanding instrument is preferable, and its use attended with less inconvenience and delay. In some cases, where the neck projects directly backwards, it is impossible to expose it without placing the patient on her back, and elevating the pelvis above the level of the shoulders, but this is rarely necessary; the reverse occasionally holds good. The principal difficulty in catching the neck of the uterus in the field of the speculum arises from our pushing it aside in the introduction; an inconvenience most likely to occur when that portion is elongated or displaced. This may be prevented, by always making a careful manual examination, before introducing the speculum, so as to ascertain the exact position of the uterus, and direction of the os; when, upon introducing the instrument well up, and withdrawing the plug, if the os be not brought into view, the speculum may be gradually withdrawn, expanding it gently at the same time. By this means the neck will generally fall into the field of the speculum. In some cases of displacement of the uterus, or when this organ is very mobile, it is necessary to have it replaced, and retained *in situ* by the hand of an assistant pressed firmly from above into the pelvis. If these hints be attended to, the instrument lubricated, and introduced slowly and high up before withdrawing the plug, whilst the blades are gradually separated, and (if necessary) the vulva and vagina dilated by the previous use of tallow bougies, little difficulty or inconvenience can attend its use.

In some cases, as of acute vaginitis, any attempt to introduce the speculum is not only painful but highly injurious, until that affection is relieved by leeching and other means. Extreme congestion of the vagina, and extraordinary sensibility of the sphincter, also render its use inadmissible until these

symptoms have been removed, and the parts reconciled to its introduction by the use of proper bougies.

The uterus, and particularly that portion of it projecting into the vagina, is very liable to inflammation, congestion, and their sequelæ. This, for obvious reasons, is more frequent in married than in single females, although by no means confined to the former. The depth of the part engaged, and its comparative insensibility, renders its affections not always well understood, or referable to their exact seat; and we are more frequently consulted for the effects and the inconveniences resulting from them, than for the primary attack. Thus chronic inflammation or congestion of the neck may continue for weeks or months, and, perhaps, until leucorrheal discharge, or ulcerative alterations, take place, no advice is sought. The practitioner then too frequently treats the symptoms, and overlooks the original disease, or by his very treatment aggravates and confirms it. Astringent and stimulating injections are almost invariably had recourse to; and cold aspersion, tonics, wine, porter, active exercise, &c., are esteemed essential for the cure of the debilitating discharge, as it is termed. The discharge certainly may be checked, but if it be, its primary cause is aggravated, and a simple, easily-managed affection is converted into an obstinate chronic disease.

It so happens that the symptom which generally attracts most the patient's attention in utero-vaginal affections is the accompanying discharge; and from the frequency of its occurrence in these cases it has thus acquired the importance of being esteemed the pathognomic affection, not, as it really is, a symptom; an error which, we fear, is likely to be confirmed by the adoption of the term *blennorrhagia* in the classification of these diseases. In applying this term we merely use it as denoting the presence of a symptom, *mucous discharge*, as its name implies; with the frequency of which every practitioner is conversant. Frequent as leucorrhœa, or blennorrhagia is with our females, it would appear that in France

it is much more so, if the statements of Ricord and Lisfranc are to be taken literally. The first says that ninety-nine women and a half in every hundred, during some part of the month, suffer more or less from blennorrhagia; whilst M. Lisfranc was in the habit of stating that the evidences of its existence were present upon the linen of nearly all the Parisian ladies; and this statement was based upon his own examination into this matter at a great washing establishment near Paris(*a*).

The prudent practitioner, when consulted in these affections, would do well, in most cases, to forget the existence of such a circumstance, and in place of treating *it*, set about ascertaining the true nature of his patient's case.

The empirical system of ordering an astringent lotion merely because there is a vaginal discharge, and then resting satisfied that everything practicable has been done, has prevailed too long, and proved an opprobrium, which every day's experience must serve to render more culpable.

Let us inquire whether, in the first instance, the disease was induced by an assignable cause; whether pelvic, sacral, or inguinal pains were first observed, with heat and irritation about the vulva, or in the course of the vagina; whether this occurred consequent upon sudden suppression of the menses, after exposure to cold or local irritation—in connexion with cutaneous eruptions,—after any marked change in habits of living,—early exertion after delivery, or miscarriage; whether the discharge, when it appeared, was subsequent to these, and how long; whether it was consequent upon intercourse, miscarriage, pregnancy, or delivery; and how far the patient's general health may be connected with it? Having inquired into all these matters, if the disease do not yield to a properly directed treatment, or if circumstances warrant a further examination, let this be made, and let the patient be treated upon fixed

(*a*) See Acton on Venereal Diseases, p. 45.

principles, based upon a knowledge of the *real nature* of her case.

The uterus, like the rectum, is liable to retardation of blood in the venous vessels and capillaries, giving rise to congestion, engorgement, and even varix. The neck and body are more prone to this than the fundus, a circumstance which, we imagine, may be accounted for by the anatomical distribution of its vessels, the blood in the fundus principally flowing to and fro in the spermatic vessels: whilst that in the neck and body returning by the hypogastric and iliacs into the cava, is more exposed to pressure from a variety of circumstances, but principally from distension of the rectum and cæcum, the enlarged uterus, in pregnancy, and pelvic growths, &c.

Congestion of the uterus is a large subject, and one that demands much the attention of the profession; we shall now merely deal with it in connexion with some of those lesions of that organ which it is our present intention to notice. It is generally more or less combined with infiltration into the cellular tissue of the neck and parenchyma, and sometimes with disease of the lining membrane, partial or complete. It contrasts with chronic inflammation by its darker colour, as seen through the speculum, and by the occasional development of varicose veins, as shewn in Fig. I. of the accompanying illustration. It is less sensible, both generally and to the touch, and though its principal inconvenience perceptible by the patient is the sense of weight or dragging, and in some more decided cases, of throbbing in the pelvic or sacral region, the latter symptom is more observable when the whole uterus is congested. In the cases where it is confined to the neck and lining membrane, the patient may experience little of these inconveniences, sometimes merely complaining of a slight feeling of prolapsus. The vaginal examination indicates, in complete congestion, a fulness and enlargement of the uterus, much resembling early

pregnancy. The partial congestion, however, gives us merely the increased development of the neck(*a*), with the body of the usual size, and imperceptible on pushing up the finger: or of the body, or a portion of it(*b*); these cases are often accompanied with displacement of the organ corresponding to the locality of the partial enlargement.

Simple engorgement does not necessarily alter the density of the uterine tissue, or cause that increase of hardness, insisted upon by some authors as a pathognomic sign of this state(*c*); it may amount to a considerable degree without any very sensible alteration in its density, unless lymph be effused into its interstitial structure; a change, however, much more likely to occur in chronic inflammation, and which has, no doubt, been often ascribed to engorgement.

Congestion may exist without any lesion of the uterus, or it may be combined, as it very frequently is, with excoriation, ulceration, or granulation of the neck or lining membrane. It is difficult, from the reasons above specified, to ascribe the priority of occurrence to either. Much difference of opinion exists amongst authors, as to their order of occurrence; some asserting that engorgement of the neck precedes, in all cases, ulceration; whilst others deny this, although they admit its occasional priority. Without entering upon a discussion, which it is impossible always to determine with accuracy, we are quite justified in saying, that rarely does inflammation or congestion persist for any great length of time, without lesion of the in-

(*a*) M. Boys de Loury and Costilhes, in their Clinical Researches give the greatest dimensions of the uterine neck, in its normal state, as three centimes, in its lateral, and two in its anterio-posterior diameter, when free from engorgement, observing that whenever the anterio-posterior equals the lateral diameter it is a proof of engorgement.—*Gazette Medicale*, June, 1845. Ranking's Abstract, vol. ii. p. 168.

(*b*) See Duparcque, tom. i. p. 91.

(*c*) In using the term engorgement we would restrict it to vascular and œdematous congestion, and not include, under this denomination, as do the French authors, hyperotrophy or fibrous deposits, steatomatous, inflammatory schirrous, or any other of the comprehensive organic deposits which they class under this term.

vesting membrane, within or without the uterus following ; and more rarely still does lesion occur, without congestion or inflammation resulting.

In inquiring into the causes of this disease, let us reflect what an important part is performed in the female, by the organs peculiar to her; the extensive sympathies they evince, particularly with the cutaneous textures and their liabilities, as partaking of both serous, mucous, and parenchymatous structures, to the diseases of all these. Let us further bear in mind the extraordinary changes and alterations, in both structure and function, which they undergo in the different states of childhood, puberty, parturition, menstruation, &c., with their modifications and interruptions; and then the comparative frequency of disease of these organs is not to be wondered at. On the contrary, that the periodicity of their functional operations, regulated by no appreciable controlling power, yet recurring at such intervals, should not more frequently be interrupted, is rather a matter of surprise.

That interruptions and alterations of their function should be productive of lesions, or occur consequent upon organic changes, is what we should naturally anticipate. The great object with the physician should be to ascertain, as far as possible, the relations in which such alterations stand to each other, as to cause and effect; this knowledge being of vital importance, with a view to rational treatment.

In addition to removing its cause, congestion of the uterus is best treated by unloading the vessels of the part engaged. From three to six leeches applied directly to the uterus through the speculum or leech-bag, will do more to relieve this symptom than twelve or eighteen externally. Scarification is also of service, but to prove effectual the incisions must be kept open, by retaining the speculum within the vagina, and injecting warm water, otherwise they generally cease to bleed the moment the speculum is withdrawn.

The vessels having been unloaded two or three times, or

oftener if necessary, counter-irritation over the pelvis or sacrum, particularly in complete congestion, must be had recourse to: where it recurs, as it often does, again and again, particularly if assuming the inflammatory character, a permanent drain with Albespeyre's paper, or, which is still more efficacious, if the urgency of the case justifies it, a caustic issue kept discharging for several weeks or even months. A continuous stream of cold or tepid water may be thrown into the vagina twice or thrice each day, and followed by the use of mild astringent lotions, or washing the whole projecting part of the neck over with an eight-grain solution of nitrate of silver, and occasional inunction with citrine ointment.

The general treatment will consist in what may be termed alteratives. Tonics should always be had recourse to with great care, although not entirely prohibited; in fact, whilst we have seen the greatest mischief induced by the use of tonics in this affection, we should state that, *in some cases*, particularly those of long standing, where the constitutional health had suffered much, decided benefit has been derived from the careful administration of both bark and iron. Pullna water, sarsaparilla, iodine, mild mercurials (particularly Plummer's pill), and taraxacum, are, however, more to be relied upon and are much safer in their general use.

When the menses are interrupted, a few leeches ought immediately to be applied to the uterus, and, if the patient be plethoric, the lancet may be used; but the period ought not to pass over without detracting some blood, either from the uterus or its immediate neighbourhood. The hip-bath should also be had recourse to about the period. If a tendency to the occurrence of a half period, or "fortnight's menstruation," shew itself, this should be forestalled by the application of leeches, the day or two before its occurrence.

Inflammation of the uterus, when it assumes the acute character, is sufficiently easily recognised, by the seat of the pain and distress, combined with the febrile excitement and

sympathetic derangements it engenders. The forms of inflammation of this organ, which we at present treat of, are not, however, so easily recognised,—we allude to partial chronic inflammation, which may, at least in the first instance, occur unattended with much constitutional disturbance, when it is more from its consequences or effects that attention may be drawn to the disease.

The same observations may hold as regards partial inflammation, even when it assumes a more acute character. Most of the symptoms accompanying congestion of the uterus will occur in inflammation, whether chronic or acute, partial or complete, of this organ; but in addition we shall have pain, more or less severe, increased on pressure, accompanied, as it partakes of the more markedly acute character, by febrile disturbance, quick pulse, rigors, high-coloured urine, irritation of the bladder, loss of appetite, thirst, and acute pain on intercourse, &c.

The obvious treatment here is general and local depletion, antiphlogistic regimen, mercury, and counter-irritation, the warm bath, soothing fomentations and injections, and the removal of every possible source of excitement. The symptoms above described are obviously applicable to both acute and chronic inflammation, whether partial or complete, of the uterus, only varying in degree according to the intensity of the symptoms and extent of the organ engaged; for instance, if fulness and marked pain, increased on pressure, exist, on examining the uterine region over the pubes, then the body of the organ is engaged; if the fulness and pain increased on pressure be perceptible only on a vaginal examination, it is confined to the os, or neck; and if a discharge of a muco-purulent fluid, with a tendency to bleed, be observed from the interior, whilst heat and throbbing occur, the lining membrane is the seat of the inflammation. Should the discharge assume a very tenacious character, difficult to disengage from the interior, with a red, vascular, and angry appearance of the everted

portion of the lining membrane at the lips (see Fig. 9), then the glandular structure within the neck is engaged. We do not always find the exact part of the organ engaged so distinctly defined in practice, for this reason, that when one part takes on the diseased action, it very commonly extends, either directly, or by the persistence of the local irritation and determination, to the adjoining structures. In inflammation of the vaginal portion of the neck of the uterus, in addition to increase in development and heat, we shall find, on introducing the speculum, that the investing membrane has assumed a vivid red, or, if of longer standing, a brick-red colour (see Fig. 2), which very often extends to the uterine portion of the vagina, or even throughout this canal. In some of these a red, and somewhat prominent, spotted, aphthous, or papular appearance is perceptible upon the os itself, as in Fig. 2, or more markedly in Fig. 3, in which case it engaged the vagina also. These papillæ are seldom larger than a large pin's head, but there are others on which a follicular enlargement occurs, giving the appearance of vesicles embedded in the substance of the uterus: in some, distinct patches of inflammation pervade the vagina, leaving the intervening portions comparatively free from disease. We have also observed rhagades or fissures combined with this inflammation of the uterus and vagina; and in one case in particular, there would have appeared reason for connecting it with a dartrous affection, to which this patient was liable on other parts of her person. The inflammation in some cases assumes the marked diptheritic character, with insular exudations as observed in the other mucous surfaces, in which case the vagina is also very commonly engaged.

We have drawn attention to the congestive and inflammatory affections of these organs in the first instance, with a view to shew their connexion with those diseases which we have now to discuss under the head of Ulcers of the Uterus. It would be natural to infer, that the ulcerative affections to which the uterus is liable should occur as the sequelæ of pre-

existing inflammation, and we doubt not that this is the case in the majority of instances. We do not from this mean it to be supposed, as it is conveyed in the observations of an intelligent writer in the *Annales de Therapeutique*(*a*), that all ulcers proceed from hypertrophy of the neck; on the contrary, we have met with many in which no such state existed, and indeed we believe it that he rather misapplies the term hypertrophy, in so designating that inflammatory or congestive fulness which precedes or accompanies these cases, and which is generally temporary in its nature. We have already alluded to the difficulty of always ascertaining accurately the order in which these states occur, from the advanced period of the case in which we are usually consulted.

Ulcers of the uterus may be classified into the benign, specific, and malignant; we have only at present to do with the first. Their causes may be general and local: the general are usually predisponent, such as constitutional diathesis, extreme plethora, or the reverse state, strumous habit; the use of stimulants; sedentary habits; costiveness; exposure to cold; cutaneous eruptions; aphthous tendency; and deranged digestion. The most prominent of the local are, inflammation and congestion, as already enumerated; excoriation; injuries; irritation extending from neighbouring organs, as the rectum and bladder; deranged menstruation; abortion; labour; displacements of the uterus; tumours, and other diseases of the uterus, vagina, and neighbouring tissues and organs; and too early exertion after labour or abortion, &c.

The simplest form in which the mild ulcer on the uterus shews itself may be termed Excoriation, or Erosion, in which it exactly resembles an abrasion of the cuticle in the male. It may commence in the same manner, or it may be the result of one of these aphthous or papular inflammations, terminating in superficial ulceration, which takes on a spreading action, and is slow to heal. We have a similar ulcerative process in

(*a*) Avril, 1845.

those affections of the mouth, with which we are so familiar, and which commence without any assignable cause (perhaps from cold or deranged digestion), ulcerate, spread, burrow, throw out granulations, and heal rapidly on the use of caustic. These cases usually commence upon the prominent part of the lips of the uterus, whilst some, spreading from the interior, the result of, perhaps, a similar state of the lining membrane, extend to the os or vagina. Amongst other causes, simple ulceration of the neck of the uterus has been ascribed by some writers to the irritation produced by the action of catarrhal discharge passing over the lips, but particularly the posterior lip of the os uteri. This opinion has been so completely answered by Duparcque, that we need not apologize for transcribing his words: "*Souvent, en effet, il y a catarrhe utérin sans ulcération du col; souvent aussi il y a ulcération au col sans sécrétion intra-utérine; enfin, la non-récidive après cicatrisation de l'ulcère, nonobstant la persistance du catarrhe utérin, et souvent aussi la cessation de tout écoulement, par le seul fait de la guérison de l'ulcération, toutes ces considérations prouvent très-péremptoirement que ces écoulemens non seulement ne sont pas cause, mais sont plus souvent essentiellement la conséquence de ces ulcérations.*"—Tom. i. p. 374.

The spread of the disease here depends evidently upon the extension of the diseased action, through continuity of tissue, the primary diseased action (inflammation) pre-existing. It requires the touch of the examiner to be well practised to recognise simple erosion (as represented in Fig. 4); and even the most practised will be deceived occasionally if he rely upon it exclusively. In the milder forms it is merely the epithelium that is eroded, and in these the surface of the sore is so smooth, and free from granulated elevations, that the finger may pass from the smooth, polished surface of the healthy neck over the ulcer, without detecting it. When the ulceration is excavated, or when the granulations are sprouting, then this disease is more easily detected; but even in these it is often difficult to

detect it by touch, although the defined margin of the ulcer may appear so distinct, as seen through the speculum. (See Fig. 4.) The ulcer in some of these presents a violet tint, with little difference in elevation: but in others, particularly as the disease is of long duration, and more granular, the tint is more vivid, and the irregularity of surface more marked.

In this form there may be very little inflammatory or congestive alteration in the neck, and little granulation or irregularity even in the ulcer itself. What, however, will place its existence beyond a doubt, will be washing it over with a ten-grain solution of nitrate of silver, or passing the solid caustic rapidly over the suspected part, when the exact outline of the ulcer will be mapped, in a dirty white tint, as represented in Fig. 5, so that there will be no possibility of its escaping detection. Although this affection may be attended with little or no inconvenience, and productive of no discharge in *many* cases, yet it is extraordinary the amount of irritation that may attend it in *others;* and, on this account, when detected, it ought always to be cured, a process which is often accomplished by once touching it gently over its whole surface with solid nitrate of silver, and using daily for ten days a very mild astringent lotion, say, one grain of acetate of lead to an ounce of water. We may mention that in using vaginal lotions, to do so with any benefit, the patient should always lie on her bed, with the shoulders rather lower than the hips, and a vessel or bed-pan be placed underneath, to receive the fluid that has been injected; and unless a continuous stream of the lotion be kept up for some minutes, we can anticipate but little benefit from any application that it would be safe to inject over the vaginal mucous membrane. Feeling the difficulties attending the want of an instrument, which, whilst it kept up this continuous stream, could be easily used, not acted upon by chemical agents, and moderate in its price; we have, for some time, directing our attention towards these objects, and have at length succeeded in constructing what may

be called a gum elastic syphon, the plan of which is here given. It is used by alternately squeezing and relaxing the bag with the one hand (the bag filling by exhaustion through its own elasticity), whilst by means of a double ball valve, the fluid is taken up and directed through the tube, which is held in the other hand, into the vagina. It answers equally well as an enema apparatus, and for all the usual purposes of the syringe.(*a*)

The Granular Ulcer is the next form we shall treat of. Like the simple affection just described, it may commence on the lip, or may extend from within; it may occur at one spot on the os, or spread over both lips. It frequently would appear to extend from within the os, and is thus very commonly found combined with the same state of disease in the mucous membrane of the uterus itself. The granulations in this are redder and more distinct than in the former case (see Fig. 6), and almost always combined with increased development of the lip or lips engaged, and often with the symptoms either of congestion or chronic inflammation of this part. When this affection extends upwards into the lining membrane of the uterus, a muco-purulent discharge exudes as well from the uterus as the ulcerated surfaces exposed to view. These surfaces, would not account for the amount of discharge which very often accompanies this affection, and which evidently comes also from the upper part of the vaginal canal, which is usually of a dusky brick colour, with occasional papillæ, as observed in Fig. 3. This also is a simple and curable affection, requiring, however, a longer time to cure than mere erosion. Its curability will be much influenced by the degree of inflammation or congestion that may accompany it, as these affections must be treated on the principles already laid down, to enable us

(*a*) This instrument is manufactured by Robertson of Bachelor's-walk, Dublin.

to heal the granulation. Whilst acute inflammation exists, there is little use in having recourse to caustics, which, in this case, also constitute the most effectual means of cure. The same observation holds with regard to chronic inflammation ; and until it is somewhat ameliorated by depletion and the other means indicated, we shall derive little benefit from our caustics. Our experience does not, however, quite coincide with that of Lisfranc, that "caustic applications are quite inadmissible whilst any inflammation of the uterus remains." In many of these cases, after reasonable depletion was had recourse to, the inflammation (congestive in its character) appeared to be kept up by the irritation caused by the ulcer, and was only removed by the application of caustic to the ulcers, the ulcer healing, and the neck losing its hyperæmia, *pari passu:* nay, in others, the strong caustic lotion, and even the stick caustic, quickly passed over the unabraded but inflamed surface of the os, appeared to produce the happiest effects in reducing the chronic inflammation prevailing in it. This was particularly observable in old chronic cases in which depletion had been tried, but with little effect. The caustic applications made to the granular ulcerations will require to be repeated at intervals of seven to ten days for three or four times, using it more lightly on each succeeding application. When the granulations are destroyed, an altered and healthy action is induced in these old habitually secreting surfaces, the cicatrization spreads from the circumference after each destruction, and at length little islands of healthy mucous membrane, with its epithelium, appear, dotted through the old granulations. In the interim between the caustic applications mild astringent lotions should be daily injected; lead, zinc, copper, alumn, decoction of oak-bark(*a*), and iodine lotions, if little inflammation be present; vegetable astringents, as tea, chamomile, poppy, and

(*a*) M. Gibert strongly recommends an alcoholic tincture of tannin, mixed with seven parts of water.—Gez. Med., August 9, 1845, and West's Report in Brit. and For. Quarterly, vol. xlv. p. 293.

marsh-mallows decoctions, if inflammatory symptoms or irritation occur. Counter-irritation by stimulating liniments, and small blisters, and even leeching and the lancet may be employed, at intervals, if required, and alterative doses of mercury also, provided no scrofulous diathesis precludes this. This affection, or modifications of it, would appear to prevail to a much greater extent in the scrofulous diathesis, and in such it always produces greater inroads upon the constitutional health.

The form of ulcer next to be considered is an aggravated granular condition, which we shall denominate the Cock's Comb Granulation, from its resemblance to this structure (see Fig. 7). It generally engages the immediate margin of the os, consisting of large, sprouting, papillous granulations, with or without intervening fissures dividing them into lobulated portions, the lobes, when present, appearing to dip a good way into the cavity of the uterus. The first few cases of this kind we met with caused much anxiety as to their being curable in their nature; but the result of our observation upon them is such as to satisfy us that they are just as certainly (although more slowly) curable as the simplest granulation. On touching them steadily with the solid caustic it seems to sink into them, the structure offering little resistance, and a little blood may escape from the part touched. From these circumstances much anxiety has been evinced about these cases, and it has fallen to our lot to relieve from the impression that the patient was labouring under a malignant disease more than one such case, where even unfavourable medical opinions had been already pronounced. The caustic application requires to be made more freely here, so as to procure a decided slough, and get more speedily at the healthy parts underneath. If the solid nitrate of silver be employed, it should be pressed steadily, and for some time, against the sprouting granulations; if the nitrate of mercury (which we prefer), then the brush dipped in it must be repeatedly applied, and introduced well into the deeper diseased structure within the os

It should have been mentioned that the slough takes, in this class of morbid organization, but a short time to separate; in some cases it is thrown off in twenty-four or forty-eight hours, in others it requires three or four days, according to the freedom with which the caustic has been used, and the extent of the structure destroyed.

There is another form of ulceration which resembles that now described, but is less sprouting in its granulations. It assumes, like this, a vivid red tint generally, engages one or both lips of the os, close to the aperture, although not necessarily found here, and occasionally extends completely into the neck, engaging the entire of both lips: it is generally, in its advanced stage, very lobular and fissured in its charcter, although not necessarily so at first, or when at some distance from the os: it is what might be termed doughy, or "boggy," in its structure, the caustic, or sound, sinking very deeply into it without any resistance being offered, and its bleeding very freely on the slightest touch: it is commonly attended with irregular red discharge, appearing at intervals, and particularly after intercourse; this occasionally amounts to debilitating hæmorrhage, with discharge of clots, and this is often the symptom that calls the attention of the patient to her being out of health. The leucorrheal discharge may be trifling, and cause little attention. This we would designate the Bleeding Ulcer (see Fig. 8), and, although a perfectly curable affection, it is likely to be confounded with the malignant ulceration from its appearance and hæmorrhagic tendency. It is not impossible that some of the cases of reputed cures in cancer uteri, of which we hear, may have been simple cases of this form of disease; and we are free to admit that we have had extreme hesitation in pronouncing, in the first instance, a prognosis in some such cases, particularly where the ulcer was combined with induration.

The following case, attended in consultation with Dr. James Brady, and reported by him, affords such an example.—"Mrs.

——, aged 48, of dark complexion; had six children; enjoyed uninterrupted good health until about two years and a half ago, when her 'changes' became more abundant, and more frequent than natural; but, attributing these irregularities to 'change of life,' she attached no importance to them, particularly as (with the exception of a white discharge in the intervals), she had no other symptom of disease. In January, 1846, the monthly change was accompanied, for the first time, by an alarming hæmorrhage, and for the following six months she had several similar attacks, which had reduced her, in August, when she sought advice, to a very low and dangerous condition. In addition to all the usual symptoms attending repeated losses of blood, the skin had assumed that peculiar green waxy hue so often found in organic disease; there was great debility, and the most obstinate vomiting, and the blood was flowing from the vagina in a continued stream; the os uteri was patulous, allowing the finger to be passed high up into the neck, which felt hard and slightly hypertrophied; the speculum revealed a fissured, granular ulceration occupying the anterior and posterior lips, particularly the former, and extending high into the neck A pencil of nitrate of silver was freely applied to the bleeding ulcers on the os and neck as high as could be reached, and the vagina plugged, which completely stopped the hæmorrhage. Subsequently the fluid nitrate of mercury was substituted for the nitrate of silver, and applied as freely both to the neck and os. In about three weeks the hæmorrhage returned, and was again completely controlled by the same means; during the three following months the nitrate of mercury was regularly applied about once a fortnight, always with obvious advantage; the whole discharge, which previously had a peculiar unhealthy odour, now assumed the character usually found in simple leucorrhœa. The only constitutional treatment adopted was alterative doses of Plummer's pill, Donovan's syrup of bark, and sulphate of quinine.

"For the last three months the menses have been regular, both as to time and quantity, the only thing complained of being a slight pain at the commencement of each period; the ulceration is quite healed, but there is still some slight redness and congestion, particularly on the posterior lip; the skin has assumed its former healthy hue; the appetite is good, and, except a slight pain in the back, the patient considers herself in as good health as she ever enjoyed."

This case is further illustrative of the inconvenience or mischief that might result from treating some of those hæmorrhagic and irregular discharges occurring about the cessation of the menses, as merely depending upon what is termed "the change of life."

It is difficult to say how much of the hæmorrhage had come from the ulcer, or whether there was not also a discharge from the interior of the uterus; we would incline to the latter supposition, in cases where, like this, the hæmorrhagic discharge was so profuse. We should not be deterred from the application of our caustic by the bleeding in these cases, and unless freely used it is of little or no avail, as the blood which flows protects the surface from its action, and neutralizes it. A piece of lint ought to be applied carefully round the margin of the ulcer before each application of the caustic, to absorb any that escapes, and prevent the adjoining healthy structures being injured. When the cauterization is completed, the passage ought to be freely washed out with a continuous stream of water, kept up for some time. This, as well as the last described granulation, is very likely to be combined with diseased action of the lining membrane of the uterus, particularly when it has its seat on the very margin of the lips, the interior of the uterus bleeding freely in these cases, when a sound is passed within it. The caustic ought to be passed as far within as we can introduce it, and applied freely to its interior, and for this purpose the nitrate of mercury, on the camel's hair pencil, is preferable to the nitrate of silver, as it is more easily applied, capable of

being more generally spread over the diseased structures in the interior, and not liable to the objection that holds as regards the solid nitrate of silver, namely, its breaking off, and remaining within the uterus. To prevent such an occurrence, where the nitrate of silver is used, it ought to be melted into a port caustic, as recommended by Mr. Wilde, in the treatment of disease of the external meatus auditorius. See Dublin Medical Journal, vol. xxiv.

Not only should the caustic be applied to the interior of the uterus in these cases, on each occasion that we apply it to the diseased structures visible to the eye; but, as the healing usually goes on from without inwards, its use ought, as a precaution, to be repeated afterwards, so as to secure that the healing action is complete within the uterus, as well as without. The mucous membrane on the interior of the lips losing its angry granular character, its ceasing to bleed on being slightly touched, the absence of the muco-purulent secretion, and conversion of the discharge, if it continue, into a transparent, glairy mucus, are the only sensible evidences we possess of a healthy state of the lining membrane, and our caustic application, followed by the milder caustic or astringent lotions, should be repeatedly applied with the brush to the interior until these effects are produced.

It may be asked how far we are justified in thus describing these ulcers or granulations of the uterus under distinctive denominations; and whether they are not referable to the same diseased action in different stages of its development? This question has frequently occurred to ourselves, and we can only state that had we been able to arrive at such a conclusion with certainty, it would have been propounded; it was, therefore, deemed more correct to represent the varieties or modifications exactly as they presented themselves to us, leaving other observers to form their own conclusions.

It will have been observed that the same plan of local treatment, very slightly modified, according to the circumstances

of each case, applies to the different cases described, requiring in some to be much longer persisted in than in others. The general treatment necessary will vary very much according to the habit, constitution, and general symptoms of each case, and the stage at which our assistance is sought. A strong, plethoric young female labouring under an ulcer, immediately consequent upon, or co-existent with, inflammation of the uterus and vagina, will require depletion and anti-phlogistic treatment; whilst a granular ulcer, attended with profuse discharge, in a worn-out, attenuated female, would not only be injured by such a plan, but demand a course of treatment directly the reverse. Again, marked inflammation or congestion occurring even with the habit last described, would indicate the necessity of local depletion, combined with a more tonic regimen; whilst indications of a scrofulous diathesis would point out the propriety of using those specific means we know to prove successful in such cases. The frequency of the occurrence of these affections in connexion with scrofula cannot be too strictly borne in mind.

The use of wine, malt drink, and animal food, is a subject that requires distinct consideration in each individual case. As a general maxim, we would say that the two first are best abstained from, or, if permitted, given very sparingly; there are, however, cases in which they become imperative, as the constitutional health gives way on their withdrawal, and of course the reparative powers are unequal to their task. The principal objection to their use is their effect in keeping up chronic inflammation and congestive determination, and it must always be borne in mind that a strong predisposition exists, particularly to this latter affection, after healing up these long existing ulcerations, requiring our most marked attention to prevent, or, if it should occur, to remove. Everything, therefore, calculated to induce irritation or congestion, must be abstained from; thus, long continuance in the erect posture, jolting in carriages over rough roads, intercourse, wine, fermented

liquors, stimulating food, and exposure to cold or fatigue, are all to be avoided whilst under treatment, and even for some time after the healing of the ulcer, as we have known a neglect of these precautions frequently retard the recovery, and even produce relapse. Should these precautions be neglected, and congestion occur, then the uterus is likely to relieve itself either by a hæmorrhagic discharge, more or less profuse, or by blennorrhagia occurring from the uterus, vagina, or both. Should these symptoms set in, leeching may be necessary, but our patient can seldom bear depletion well at this stage of her treatment. Counter-irritation now becomes the most powerful means of reaching these deep-seated congestions and inflammations, particularly when attending the structural alterations and chronic affections described; and with this view, either the application of repeated small blisters over the pubes or sacrum, Albespeyre's paper, or the hot iron, as recommended by Dr. Corrigan in sciatica, will be found very serviceable. In some of the more obstinate cases, which did not yield to simple remedies, the introduction of a caustic issue, kept open for some weeks, or months, has been most efficacious. The nitrate of mercury allowed to lie on the abdominal surface, over the pubes, for some minutes, has answered very well, and produced a sufficient slough to imbed a piece of felt in, and is a less severe and painful application than the potassa fusa, generally applied where caustic issues are required.

We should have mentioned that amongst the plans of constitutional treatment had recourse to in some of the more obstinate cases described, change of air is pre-eminently useful. Often have we seen these ulcers become stationary in some stage of their progess, then extend, assume an unhealthy appearance, and, when every variety of local treatment seemed to fail, moving our patient a few miles from her previous residence induced a speedy healing action. In the lapse, perhaps, of a fortnight matters again became stationary, when the change of place was repeated with the same good effect. In fact, this

circumstance is now so familiar to us, that not unfrequently a patient is kept moving about from place to place until the cure is effected. It is remarkable also that this check in the progress of healing is more likely to occur in the approximation to cicatrization than in the earlier stage of the treatment. Sea air answers best in the great majority of cases, but we have even found a change from the coast inland of service. The air of Kingstown seems to agree particularly well with most of them.

It occasionally happens, that, just on completing the cicatrization of one of these old granulations, an aphtha appears upon its surface, exactly as in the mucous membrane of the fauces in infants, and if treated injudiciously it may spread over the membrane, or the ulcer may open out afresh. A continuous stream of borax solution, with an occasional painting over with the weak nitrate of silver lotion, a course of mineral acids, or waters, and, above all, change of air, will soon remove this, but it ought not be lost sight of, lest it run to ulceration.

We have generally found that, when our patient was in circumstances to admit of such a thorough constitutional change as a tour to the German watering-places usually produces, and when the season of the year allowed of it, her permanent recovery was best secured by availing herself of the advantage of this after the healing of the ulcer. Homburgh and Kissingen are the waters most safe and useful, and care should be taken not to use waters containing much iron, if any tendency to congestion exist, as we have known much mischief done by neglecting this precaution. Where a more aperient course is necessary, Pullna water answers very well, and as a resolvent remedy this water can be used at home, taking from an ale-glassful upwards each morning before breakfast, and walking for half an hour after taking it. When the digestive organs are sluggish, and congestion exists, or is threatened, this course answers particularly well. The Brighton Pullna, or Peilnar water, prepared by Straus, answers quite as well as the real water.

Although the ulcerative affections described cannot be said absolutely to preclude the possibility of pregnancy, there can be no doubt that they lessen the liability to its occurrence (and particularly the last forms detailed), so much as to justify their being enumerated amongst the causes of barrenness. Several remarkable cases illustrative of this fact have occurred under our notice, in which ladies, married for years without a family, and labouring under these affections, had proved pregnant within such a term from the healing of the ulcer, and return to uterine health, as to leave little doubt that they stood in relation of cause and effect without even straining a *post hoc* case. Although in two or three instances pregnancy occurred within two or three months after their cure, yet generally it required a much longer time, say six months or a year, or even two years: as if the organs had required time to recover their tone and functional energies after a derangement of this kind.

In illustration we may give a case occcurring in June, 1843. Mrs. ——, aged 27, of a scrofulous diathesis, six years married; had two children, the youngest four years old; miscarried shortly after the birth of the last, since when has suffered from constant blennorrhagia, with dragging pain in the back; lassitude; loss of appetite, and great debility; has been abroad for treatment and change of air; has taken tonics without end, and used astringent lotions with temporary check to the discharge. On examination, an ulcer, of the cock's-comb character, was detected, which healed under the use of caustic, residence on the sea-shore, and iodine, with occasional tonic alteratives. This lady went to the country perfectly cured of the ulcer after three months, and within two months proved pregnant, went to her full time, and has since had two children.

When pregnancy occurs along with an ulcerated state of the os, particularly if the inner margin of the lips, or lining membrane of the uterus, partake of the disease, we can well understand that hæmorrhagic discharge from the uterus is

likely to occur at any stage of gestation, but more especially when the neck takes on its development. These cases are not only predisposed to abortion, but those repeated premature confinements, preceded and attended by hæmorrhage, which we meet in the fifth, sixth, or seventh months, not unfrequently depend upon this circumstance, a fact that should be always borne in mind and inquired into when consulted about miscarriages or premature confinements, with a view to their prevention in future pregnancies. If an ulcer exist it should be cured before reimpregnation; many cases illustrative of the importance of attention to this circumstance could be adduced. Now, although the ulcer be healed before reimpregnation (and thus confinement to the recumbent posture for months may be avoided), yet let it not be imagined that no precaution is necessary on the recurrence of the period of former miscarriages, or premature confinements, as habit engenders a tendency to unload the womb at given periods, and great care should be taken at these times to prevent its occurrence, even although no threatening by discharge evince itself.

It will naturally occur to us from what has preceded, that as well with a view to impregnation as in order to prevent the throwing off the ovum prematurely, the more perfectly the organs shall have returned to their healthy condition, and the longer time that elapses without cohabitation, the more likely is impregnation to take place, and the less likely to be prematurely interrupted.

We have seen that ulcers of the neck of the uterus do not absolutely preclude the occurrence of pregnancy,—nay, the fact of this function being accomplished with the coexistence of even malignant ulceration of the neck, is long familiar to the profession. When consulted in a case of this complication, are we justified in undertaking to heal the case locally, pending the expiration of the pregnancy? The inducements to adopting local treatment, then, are the possibility of the disease spreading if allowed to continue unchecked, and the constitu-

tion taking up the diseased action, as in specific ulcers; the checking a profuse weakening discharge; and the prevention of miscarriage or premature confinement. On the other hand, it may be fairly questioned whether the risk of miscarriage or premature labour would not be greater under the repeated use of the speculum and other local interference than by leaving the case to be restrained by mild astringent injections, and carefully-directed constitutional treatment until after labour. As a general rule, we would recommend the latter plan, although in some cases we have been obliged to adopt a different one; for instance, in a well-marked venereal ulcer we have no alternative but the use of such treatment, both local and general, as will prevent the ravages of this disease. Even in a case exhibiting suspicious characters, the same plan becomes necessary.

In other ulcerations also, where it is a choice of evils,—for instance, those exhibiting doubtful characters of malignancy, lupus, or phagadenic ulcerations,—we would not feel justified in losing several months in our endeavours to check their progress. In aggravated cases of what we have designated the bleeding ulcer, attended with repeated hæmorrhages, which, if unchecked, not only much debilitate our patient, but are also likely to induce miscarriage, a similar plan is necessary. Several such cases have occurred to us, in which we have, by local treatment, prevented these repeated discharges, and enabled our patient to go to her full time, although having had repeated premature confinements before from this cause. A case of this kind occurred in a lady who sought advice for sanious and purulent discharge, with occasional hæmorrhages, great debility and depression, quick, small pulse, and constant apprehension of miscarriage, having aborted before, under similar circumstances, about a month later in her pregnancy. On examination, a bleeding ulcer, such as is depicted in Fig. 8, occupied the entire circumference of the os, extending evidently some way into the neck, which was slightly patu-

lous, and plugged with glutinous secretion. A stick of nitrate of silver was passed quickly over the ulcer, and as far within the os as was practicable without using any force or disturbance to the parts. This operation was followed by an immediate check to the discharge, from which the patient continued free for four days. The superficial slough then separated with slight return of red-tinted discharge. This operation was afterwards repeated on three occasions with intervals of eight days, the saturnine lotion being used daily in the interim, when the discharge totally ceased. The patient improved in strength and appearance, was able to walk and drive about, and went on to her full time free from inconvenience. When she was examined after her confinement, a very slight ulceration was perceptible on the posterior margin of the neck, which was healed by one caustic application.

Although the simpler ulcerations, and particularly those on the neck, at a distance from the os, might be cauterized in pregnancy with less risk of producing miscarriage than the case where the ulcer extends within the os, yet as no urgent necessity for interference exists, we had better leave them to the use of astringent injections until after labour. Certainly in no case of pregnancy, where milder and less irritating means were available, and promised fairly, should we be induced to follow the injunctions of M. B. de Loury and Costilhes, and use that most potent of all caustics, the Vienna paste, and afterwards plug the vagina for twelve hours, with a view to the cure of the ulcer.

The occurrence of inflammation and ulceration of the cervix in virgins is less frequent, for obvious reasons, than in the married female; but it also occurs with them. With the exception of the linear or fissured ulceration (which is confined, as far as our observation goes, to the married female who has been impregnated, and results from the effects of impregnation), most of the other forms of inflammation or ulceration occur in unmarried females, or in females so recently married,

and exhibiting such evidences of its having existed previous to matrimony, as to leave no possible doubt that they had long suffered from it in the virgin state.

Opportunities of investigating these cases are comparatively rare, as it is only in the more aggravated forms, and where every other available means have failed, that an examination is instituted.

Some months since, our advice was taken for a young lady aged 19, six weeks married, and who had suffered from hæmorrhagic discharge from the uterus from a few days after her marriage. On inquiry it was ascertained that she had had repeated irregularities of a similar kind since she was fifteen years of age; the menorrhagia alternating with blennorrhagia, the latter to a slight extent. Under these circumstances a vaginal examination was instituted, and instead of an ovum (she supposed herself pregnant and threatened with abortion), a bleeding ulcer was found to occupy both lips of the os and to spread some way up into the neck, which was prominent, rather hard, and fuller than natural, but exhibited all the characteristics of the virgin uterus. This case was treated with caustics and iodine; stimulants and tonics, which had been very freely given, were withheld; she perfectly recovered, the ulcer cicatrising, and the menorrhagia and blennorrhagia totally disappearing.

In the case of an unmarried lady, aged 30, for many years in ill health, wasted, subject to repeated attacks of menorrhagia, with blennorrhagia to a slight extent in the interim, and who had been repeatedly treated with tonics, astringents, &c., the relations required an examination to be made, as every plan of treatment had hitherto failed, and malignant disease was dreaded. This was done, after a preparation of some days by bougies, when a granular ulcer was detected by the touch. The constriction of the parts was such that a speculum could not be used without great suffering; caustics were applied through a tube, and astringent injections used daily;

counter-irritations had recourse to, and a course of Plummer's pill and Pullna water administered. The ulcer healed, and her health and appearance rapidly improved, with a total recovery from both sanguineous and muco-purulent discharge.

Nothing is more striking in these cases of recovery than the change effected in the skin, and its return to the tints of health, from its shrivelled, anxious, and sallow appearance.

The fissures that occur from abortions and labour, in the lips of the os, constitute a frequent incipient cause of ulceration, which, taking on an unhealthy action, attended with vascularity of the adjoining tissues, spread both within and without. They are sometimes, however, confined to the very margin of the os. These are fissured or linear ulcerations (see Fig. 1), which require to be treated with caustics, as those ulcers already described: the caustic should dip well into the bottom of each fissure, as in fissures of the anus, to secure their healing.

The small tubercles(*a*) occasionally observed in the cervix uteri are said to pass into scrofulous ulcers, as in other parts of the body; but we have been unable to trace the transition so markedly as to justify our ascribing any of those ulcers we have met with to this cause.

The genito-urinary mucous membrane is markedly liable to catarrhal affections from cold, or other causes determining to mucous membranes, such as this susceptible structure is in very many cases predisposed to. Thus, as we see in some a liability to nasal, and in others to bronchial or gastric mucitis; so in many females there exists a strong predisposition to its occurrence in the uterus or vagina. Catarrh in the uterus is much more obstinate than this affection in the vagina, and the inflammation of the latter mucous membrane more tedious in resolving itself than that occurring in the nymphæ and vulva. Thus, the deeper the seat of the disease the more difficult to cure, a fact which is observed to

(*a*) See Dr. J. H. Bennett's excellent Practical Treatise. London, 1845.

occur independent of the difficulty attending the treatment. The same observation applies in the male(*a*), the inflammation of the prepuce and glans penis being much more under control than that of the urethra, or throat, &c.

In catarrh of the uterus the disease commences with simple inflammation of the lining membrane of this organ, which may be confined to the cavity of the neck, or extend throughout the body. The inflammation may extend to the submucous tissue, accompanied by tension and fulness in the uterine region, the natural secretions being first, perhaps, suspended, then increased. The glandular structures in the neck and os become diseased, a muco-purulent secretion takes place from the interior of the uterus, exhibiting, as the effect of the glandular hyperæmia, a glairy, viscid, and extremely tenacious character, constituting one of the most marked pathognomic signs of this affection. The menstrual secretion may continue to return with regularity, or it may be suspended; and, in the latter case, the suspension is often combined with congestion of the uterus, adding to its bulk considerably (see Figs. 1 and 9), and causing an increase of all the symptoms of local distress. This state may persist for a few months, when the menstruation may return in excess, and recur irregularly, assuming, at times, a hæmorrhagic character, and induced by slight exertion or irritation. This state, owing to the suppression of the menses, and increase in development of the uterus, has been mistaken for early pregnancy; the uterus assuming the size of the pregnant organ from the first to the third month.

When the menses continue regular the uterus increases but little in development, but usually appears deeper in colour, from the congestion which so generally accompanies the catarrh; the os is usually patulous, the inner edge red and granular, bleeding on the slightest touch, and the os plugged up with viscid, muco-purulent matter, a portion of which hangs out into the vagina, and which, on examination, presents the

(*a*) See Acton on Venereal Diseases, p. 47.

appearances observed in Fig. 9. The mucus is removed with the greatest difficulty, and the sound or brush introduced within the cavity of the neck for this purpose invariably causes an escape of blood from the diseased membrane on the slightest touch.

This is a disease frequently met with in married females who have borne no children, and is one of the most frequent accompaniments of barrenness—frequently, perhaps, its cause; it is also often met with in unmarried females; and married females whilst they often trace it to repeated early miscarriages, just as often admit its having existed years previous to their marriage(*a*).

There is an expression of countenance, distressing in its nature, and a tint of skin, as if washed over with a dirty brush, which usually accompanies this affection, and which there is no mistaking. What causes the disease to escape the ken of the practitioner, in general, is, that on an ordinary vaginal examination, no diseased state of the uterus can be detected, and even with the speculum we may overlook it, as the alteration of the mucous membrane does not always extend to the everted portion of the lips (as it does in Fig. 9); the glairy mucus filling the os may be absent, or, if present, esteemed a natural secretion. Whenever the appearance of the skin just described, accompanied with an anxious expression, is found in a barren female, whose uterine health is deranged,—more especially if she have red discharges occurring from the uterus at irregular periods, with or without the glairy discharge, and accompanied by debility and lassitude,—this disease should be suspected, and a careful inquiry as to its existence instituted.

It is of great importance that this disease should be arrested, as, although it may go on for many years, after the constitution becomes reconciled to it, producing little more inconvenience than that mentioned above, yet, in some cases it proceeds to a state of disorganization of the uterus, the submucous

(*a*) This is a common appearance in prostitutes.

tissues becoming more extensively engaged, and undergoing a change which may be termed *uterine ramollissement*, attended with frequent hæmorrhages and unhealthy grumous or muco-purulent discharges, the constitution sympathizing more and more with the disease, until the patient sinks under it. This termination is, however, rare, yet there can be little doubt, that, without the disease proving in itself directly fatal, it lays the foundation of such constitutional delicacy as indirectly to produce a fatal result by the induction of other diseases of debility, as phthisis and dropsy, &c.

The difficulty and risk attending applications made to the interior of the uterus, render the chronic affections of its lining membrane less promising in their recovery. When the diseased action is confined to the cavity of the neck, it is more within our control; and here a catheter loaded with nitrate of silver, or a port caustic constructed as already mentioned, so that the caustic cannot possibly escape and remain in the uterus, may be repeatedly applied, and by this means the action of the membrane altered, and reduced to a healthy state. The nitrate of mercury is both a safer and more efficacious alterative in these cases. A camel's hair brush, dipped in this fluid, may, where the os is sufficiently patulous, be passed within it, and carried quickly over the interior membrane, re-dipping and again introducing it until a sufficient effect is produced. The os is very likely to contract after its first or second introduction, rendering its repetition difficult, and it would not be safe to introduce a larger quantity than the brush will carry. In order to secure the caustic's being diffused over the interior, and not wiped off at its entrance by the lips, it is well to use a gum-elastic tube, open at the extremity, through which the loaded brush can be passed. This plan will enable us also to get our applications high up into the body of the uterus. The greatest difficulty we have to contend with, in some of these cases, is overcoming the contraction of the neck, or inner os, in order to get up to the body. This must be done by a series of bougies, and those made of gutta perca

answer particularly well, from their combining resistance with elasticity, so as to lessen the liability of using any injurious force in overcoming the spasm. When this has been sufficiently overcome to admit of passing the largest-sized catheter or tube, as already described, our applications can be made through it. If a brush be used, it can be loaded and concealed within the tube until the point of difficulty be overcome; and then, having previously taken the precaution of graduating the handle to which the brush is attached, we can move it over the interior of the uterus free of the tube, and withdraw it: the brush or sponge should be so fastened to the stick as to prevent the possibility of its separating. In this way nitrate of silver, its solution, nitrate of mercury, nitrate of copper, or whatever application we place most confidence in, can be applied with safety.

We had been in the habit of using injections freely into the uterus for some years without any inconvenience, until we observed a case published in one of the periodicals about nine years ago, in which this operation was reported to have been followed by fatal peritonitis, in consequence of the injected fluid escaping into the abdominal cavity through the Fallopian tube; since then we have adopted this practice less frequently, and with such precautions as to prevent the possibility of any mischief of this kind occurring. By means of a long, graduated glass syringe, a quantity of fluid, not exceeding twenty minims, can be thrown into the cavity of the uterus, and its escape secured in the following manner: the syringe, attached accurately to a small male gum-elastic catheter, is fitted into a somewhat shorter catheter or tube, open and well-finished at its extremity, the difference in calibre between the catheters being such that the large catheter admits of the regurgitation of the fluid between it and the smaller. The syringe and inner catheter are first charged with the fluid to the point, leaving the piston so far withdrawn as to allow merely twenty minims, or half a drachm, in addition to the charging of the tube, within the cylinder of the syringe, as

proved by the graduated mark on its side. The patient is now placed in the recumbent posture, the tube introduced, the inner catheter (graduated also, so as to indicate when it projects beyond the other) is passed through, and the fluid slowly projected into the cavity of the uterus. After resting there as long as we wish, the piston may be drawn up so as to suck any remaining portion of the fluid, and a little water thrown in, in the same manner, if required; or the larger tube allowed to remain, so as to secure the escape of any remaining fluid.

By this means, applications can be made with safety to the interior of the uterus, and, as in these obstinate, and often unpromising cases, to prove efficacious, they require to be several times repeated, it becomes a great desideratum that their use should be attended with the least possible risk and inconvenience.

It should be mentioned, that in two out of many cases in which uterine injections have been practised, they were succeeded by acute hysteralgia, accompanied by severe dragging sensations in the loins and back. These symptoms, although at first apparently alarming, yielded in both instances to full opiates, the warm bath, and abdominal fomentations.

After the free cauterization with nitrate of mercury having been repeated in these cases three or four times, at intervals of eight or ten days, a ten-grain solution of nitrate of silver or nitrate of copper may be used at intervals of three or four days for some time; afterwards, the repeated use of acetate of lead, zinc, and borax lotions, at first concentrated, and then about two or three grains to the ounce, seem to agree best. With this local treatment, engorgement, which is very commonly present, must be removed by direct leeching, if the patient can bear it, followed by counter-irritation, as already described. Occasional mustard plasters, stimulating liniments, or the emplastrum calefaciens, or a plaster of Burgundy pitch and tartar emetic, may be allowed to remain for some time over the pubes, or on the sacrum; and, in cases where the obstinacy of

the congestion requires it, and the patient's constitutional health will permit of it, a more permanent drain by means of potassa fusa, the Vienna paste, or nitrate of mercury, may be established.

The use of such remedies as induce a healthy action in the catarrhal affections of other organs may be tried, and the balsams, cubebs, and buchu, seem occasionally of service. Tonics, although inadmissible in the first instance, and calculated to aggravate the disease, yet, when cautiously tried after the local treatment, or combined with it, appear of service; of these the best are the mineral acids, zinc, quinine, and the iodide of iron; but if a hæmorrhagic tendency exist, iron must be used with great caution. Benefit appeared to have been derived from Donovan's arsenical solution, in some of the more obstinate cases, when other means had failed. The most powerful alterations, in these cases, are change of climate and the cautious use of mineral waters: of course abstinence from every local irritation, and from the use of stimulants, is essential. Although nutritive diet and moderate walking exercise are admissible, a total change to a milk diet, giving up meat, wine, and malt altogether, has sometimes appeared beneficial.

The symptoms that indicate improvement here are, diminution of the size of the uterus and of its accompanying distress, when engorgement had coexisted with the catarrh; the diminution and alteration in character of the secretion; its losing its opaque muco-purulent appearance, and becoming transparent and glairy; the skin assuming a healthy tint, and the person getting less wasted, whilst the irregular sanious discharge, as well as the excessive hæmorrhagic and painful menstruation, ceasing. But the crowning proof of recovery from this disease would be pregnancy, as we have met with no affection of the uterus, where an absolute mechanical obstruction did not exist, so invariably attended with barrenness as catarrh, a fact ascribable to the viscid secretion blocking up the uterus,—as well as to the change effected by the diseased organ interrupting its functional powers in reproduction.

It not unfrequently happens that, when an ulcer of some standing is healed (whether it had or had not been previously combined with engorgement), congestion of the uterus sets in, and in this case the congestion generally extends to the body as well as the neck of the uterus. The same observation holds on altering to a healthy state the secreting lining membrane of the uterus, in cases of catarrh, and also in cases of inflammation of the glands in the neck.

This result is much more likely to occur in those cases in which the engorgement or subacute inflammation, co-existing with these morbid states, was not sufficiently attended to and relieved throughout the progress of the recovery, by unloading the vessels sufficiently at this time, either by leeching, scarification, or counter-irritation. This will be indicated by pelvic and lumbar distress, throbbing, and bearing down, and, if neglected, may terminate in a natural effort to relieve itself, either by the occurrence of mennorrhagia, or a profuse blennorrhagia, or sometimes, in the first instance, by amenorrhœa, which after continuing for some months, merges into one or other of the former states. Should this result unfortunately occur, it must be met promptly by depletion, if the patient can bear this; and, if a plethoric female, by general as well as local depletion. If these means fail, by repeated small blisters, applied over the pubis or sacrum; or, in more obstinate cases, by the insertion of an issue. When the congestion extends to the whole uterus it is rarely relieved without very decided counter-irritation. This engorged state of the uterus is very liable to alternate with, translate to, or coexist with, congestion of the liver or spleen; a fact that ought to be borne in mind, as these states set in so rapidly at times, as to render them difficult to discuss, and more particularly, if our patient be worn out by the disease, and reduced by the treatment, it places her in a very unfavourable position for bearing the discipline which this new complication demands.

Leeching and counter-irritation, with mercurial alteratives, must be had recourse to, for the organs secondarily engaged;

but what we have derived the most marked benefit from under these circumstances, has been a course of Pullna water, and taraxacum, followed by the discutient waters of Germany, change of air, and the use of the Russian bath.

We have already stated, whilst treating of this affection, coexisting with ulceration, that the use of tonics, although sometimes indicated and required, must be resorted to with the greatest caution. The same observation applies, with equal or even more force here; and whilst we can bear testimony to the marked benefit occasionally derived from a judiciously administered course of tonics, and even of steel (which is that most prone to increase congestion), we must state, that we have seen a vast deal of mischief done by their indiscriminate use, and marked engorgement of uterus and liver recur again and again under their administration, where the indications were such as to tempt the physician to avail himself of the acknowledged advantages afforded by this class of remedies in improving the general health.

We have now to treat of an occasional complication of these uterine ulcerations, requiring especial attention, we mean mucous polypi(*a*), as their existence often escapes our notice.

Fig. 10 affords an example of that peculiar form of polypus, in which the thinnest possible layer of mucous membrane investing a glutinous fluid, grows from the inner surface of the uterus, generally the neck, by a long, thready pedicle. There may be several of them, rarely but one; and they are, in the great majority of cases, combined with an unhealthy state of the lining membrane of the uterus in the neighbourhood; in some presenting chronic inflammation merely, in others a state of ulceration, with hardness and unhealthy degeneration of the uterine wall; whilst in many, catarrhal inflammation of the whole lining membrane accompanies their growth. Although the polypous growth projects generally beyond the os, it is so yielding in its nature that it requires a practised examiner to detect it by

(*a*) See Dr. Bennet's papers in The Lancet for 1845; and Dr. Montgomery, in Dub. Quar. Jour. for Aug. 1846.

the touch alone: affording little more resistance than a globule of viscid mucus exuding from the uterus. The speculum, however, sets any doubt that remains, as to its existence, at rest, as it exhibits the projecting pendulous substance observed in Fig. 10. This is rather larger than those usually met with; and from the effect it produced in interfering with impregnation, in the following case from which this drawing was taken, demands our attention.

Our professional assistance was required by Mrs. ——, for irregularity, as she termed it, in her periodic health, consisting of a protracted hæmorrhagic discharge. She was about thirty-eight years of age, and had had one pregnancy immediately on her marriage, but miscarried, and had not since conceived. On examination, a small, mucous, polypous growth was detected, filling up completely the os uteri, in fact quite as effectually as if it had been plugged. The lips of the os were tumid, and the margins inflamed. The growth was removed by scissors, and no other presented itself. The solid nitrate of silver was passed freely into the os, which was inflamed and slightly ulcerated on the inner surface; and she was allowed to return to her residence, a few miles from town, with injunctions of separation. Within a month she was again visited, suffering intense sickness of stomach without any assignable cause; pregnancy was suspected, although the suspicion appeared a vague one under the circumstances, but its possibility was strenuously denied by her; nevertheless she was delivered of a healthy boy, within eight months and a fortnight from this time.

This result is, however, a rare one in these cases, as generally the diseased state of the lining membrane of the uterus is such as to preclude pregnancy. Other similar growths exist higher up in the neck or body of the uterus, sometimes extremely small and with shorter pedicles, and these come down at uncertain intervals. Sometimes several very small ones, giving the appearance of little more than hypertrophied papillæ, are perceptible within the neck, with or without intervening

ulceration of the mucous membrane; in more aggravated cases the ulcers appear excavated into the substance of the uterus. The patient's countenance is sallow, and indicates disease; usually there is wasting, loss of strength, with pelvic distress, and not unfrequently, as in catarrh, these symptoms are accompanied by displacement of the uterus. We imagine that this, as well as uterine catarrh, is more frequently met with in gouty habits, and is not an uncommon affection in females who are said to recommence menstruating at a very advanced age, or rather who have irregular hæmorrhagic discharges at this period. Removal of these growths and the free use of caustic, particularly the nitrate of mercury, to the interior of the uterus, about their base, followed by mild astringent applications and weak caustic solutions and alteratives, becomes necessary; and, if engorgement and catarrh coexist, the treatment applicable to these states is to be employed.

A conversance with the *sympathetic affections* which these lesions of the uterine structures give rise to is of the utmost importance to the practitioner, as ignorance of them has been too often the source of protracted suffering to the unfortunate patient; they may be pronounced local and general, and are often so much more marked and prominent than the disease itself, as to engross our exclusive attention. Those of the bladder and rectum are amongst the most frequent; for instance:—In June, 1841, Miss ——, unmarried, aged 32, of a spare habit, anxious expression, and dingy complexion; complained of dysuria and frequent micturition, particularly at night, rendering her nights miserable, and, as she expresses it, life a burden to her; urine natural, except when digestive organs are mismanaged, then slightly turbid, with mucous flocculi; has been suffering from this complaint for some years, and was treated in various ways. Tonics, diluents, resins, baths, anodynes, &c., were tried without effect. Complains of no decided leucorrhœa, but on strict inquiry a very trifling muco-purulent discharge is said to have been occasionally observed. A

vaginal examination was instituted, and granular ulceration, with engorgement of the anterior lip of the neck, detected; this was treated by scarification, caustics, and astringent lotions; a mild course of mineral acids was administered, and the hot and cold bath persisted in daily; this patient speedily recovered, and has since continued free from this distressing complaint.

Mrs.——, aged 35, married for seven years, but had no family; for five years has suffered almost constantly from pain at the neck of the bladder, and along the whole course of the urethra, with spasmodic contraction of this canal about its upper third; coitus is attended with much suffering; has occasional exacerbations of these attacks, when her sufferings are extreme; some small warty growths were removed from the meatus and interior of the canal, and bougies, as well as caustic applications, were applied. As intense suffering was produced on pressing the posterior part of the body of the uterus, which was rather more tumid than natural, and a fissure, or linear ulcer, surrounding the os to a very slight extent, was detected, the former was remedied by repeated leeching directly to the part, the latter by caustics; an alterative course of mercury was given, followed by mild tonics, when she recovered, and within four months afterwards afforded the best proof of this by becoming pregnant: she carried her child to the full period, was delivered naturally under the care of our friend Dr. Millar, of Londonderry, and the last accounts of her were most satisfactory.

Mrs. ——, aged 40, had several children; complains of constant pressure, fulness, and pain in the region of the rectum, some way within the anus; with dragging sensations in the loins, great straining at stool, and difficulty in relieving the bowels, although not naturally costive; the motion of a carriage is most distressing, and her suffering from taking purgative medicine is extreme: she describes this as being lessened after the contents of the bowels pass a certain point. A careful examination of the gut can detect no disease whatever; but the

neck of the uterus is felt projecting in upon the rectum, and when pressed against, through it, considerable pain is experienced, but referred by the patient entirely to the gut, and not at all to the womb(*a*). A vaginal examination detects the uterus slightly anteverted; the neck engorged to a considerable extent, and pressing on the rectum, with an old ulceration of what we denominated the cock's-comb character occupying the whole circumference of the os, and spreading to a considerable extent over the posterior lip. Leeches were repeatedly applied; the nitrate of mercury freely used to the ulcer. The recumbent position enjoined, together with a spare diet and the withdrawal of stimulants, as this lady was of a full, plethoric habit: the result of this was a gradual but complete recovery from the distress in the rectum to which she had for years been liable, without any direct local treatment of this organ.

A very frequent symptomatic ailment in these lesions is pain of a neuralgic character in the iliac region, its most frequent seat being about midway between the crest of the ilium and the umbilicus.

Mrs. ——, aged 27, three years married, without a family, sought advice for pain in this region, ascribed to disease of the left ovary, which, she stated, was enlarged, and for which she had been actively treated. On a careful examination no such enlargement or other evidence of ovarian disease could be detected, and the disease was esteemed neuralgic. Treatment to meet this was tried, but without effect. She denied having any vaginal discharge, and stated her periodic health to be quite natural, but admitted that shortly after her marriage she had suffered from blenorrhagia. A vaginal examination was instituted, and a simple ulcer or erosion observed on the anterior lip, with slight engorgement of the neck. This was speedily cured by caustics and emollients; a course of syrup of bark administered, and separation kept up for two months. The lady returned to the country, much

(*a*) See Lever's Practical Treatise, p. 65.

relieved of the pain, although not perfectly free from it, and within six weeks after her return proved pregnant. She has since then (three years ago) had two children. The pain disappeared, unless for about two months after her last confinement, when the ulceration had re-appeared, the effect of her confinement, and on this occasion assumed the fissured or linear character. It as speedily disappeared under the usual treatment, so did the pain, and she has since, upwards of a year and a half, been quite free from it.

One of the most frequent of the more remote uterine sympathetic affections is headach, which may assume the character of cephalalgia, hæmæcrania, or trigeminal neuralgia: the latter, but particularly that of the supra-orbital branch, is the more frequent. In addition to curing the original source of irritation, the use of ammonia and valerian, but especially of bark, will afford relief to the headach; Donovan's syrup is the form we have found most safe and efficacious. We shall not dwell upon this subject, as it is intended to treat of it hereafter, under the head of "Catamenial Headach," an affection very frequently met with, and which demands attention. Neuralgia also appears in other parts of the body depending upon uterine sympathies. We shall now give a remarkable case, in which treatment was totally unavailing, the sympathetic neuralgia appearing to depend upon the state of pregnancy, and only relieved by its terminating. Mrs. B. was brought from the country for advice: she was a slight, delicate person, with a transparent skin, shrunken look, her countenance expressive of great suffering, and she had already borne two children. She had for some years suffered occasionally from acute pain in the abdomen, a little to the left of and below the umbilicus, which recurred, after long intervals, particularly during her pregnancy. It was irregularly periodic in its character, and her agony during the acute suffering was such as we have rarely witnessed, although she was a most patient creature. Fortunately the extreme anguish was but of short duration, as it gradually subsided into a more tolerable pain, which

would eventually disappear altogether, and not return until about the same hour the next day. She was in about the fourth month of pregnancy, and a copious muco-purulent discharge, with occasional hæmorrhaghic tint, escaped from the vagina. On examination a very extensive aggravated granular ulcer of a scrofulous character, and which bled freely on the slightest touch, was perceptible, the lips and neck were tumid and everted, and the ulcer occupied the interior of the neck, as well as spread extensively over both lips. The stick caustic was freely applied, but its application was attended with marked exacerbations of pain, and with some discharge of blood; astringent lotions, alumn, lead, and copper, were thrown up; and the caustic was repeated. The ulcer took on a healthy action, and her general health and appearance improved. The pain, however, after becoming less severe, again recurred in all its fierceness. Every medicine that experience had recommended in these cases was had recourse to, and the assistance of some of the ablest of our practitioners was obtained. Change of air and regimen, bathing, tonics, bark, iron, arsenic, applications of all descriptions, stimulating and soothing, opium in every form, were tried; morphine was inserted, veratrine used, arnica, and Indian hemp tried; and at length, under the apprehension that organic disease was invading the intestines, which appeared to be the seat of the pain, an issue was inserted, and even morphine allowed to absorb through it, to endeavour to afford relief to her agony; but all failed. The pain returned, not so regularly periodic, but it returned; and, at length, both patient and physician were worn out with this distresing malady and its unavailing treatment. She returned, in despair of obtaining relief, to the country, had a premature confinement, the disease gradually wore away, and the last reports of her were, that she is free from pain, and has been so for months, and is, in fact, as well as before this illness. Here the pregnancy, as much as the ulcer, seemed the source of irritation.

To face page 100.

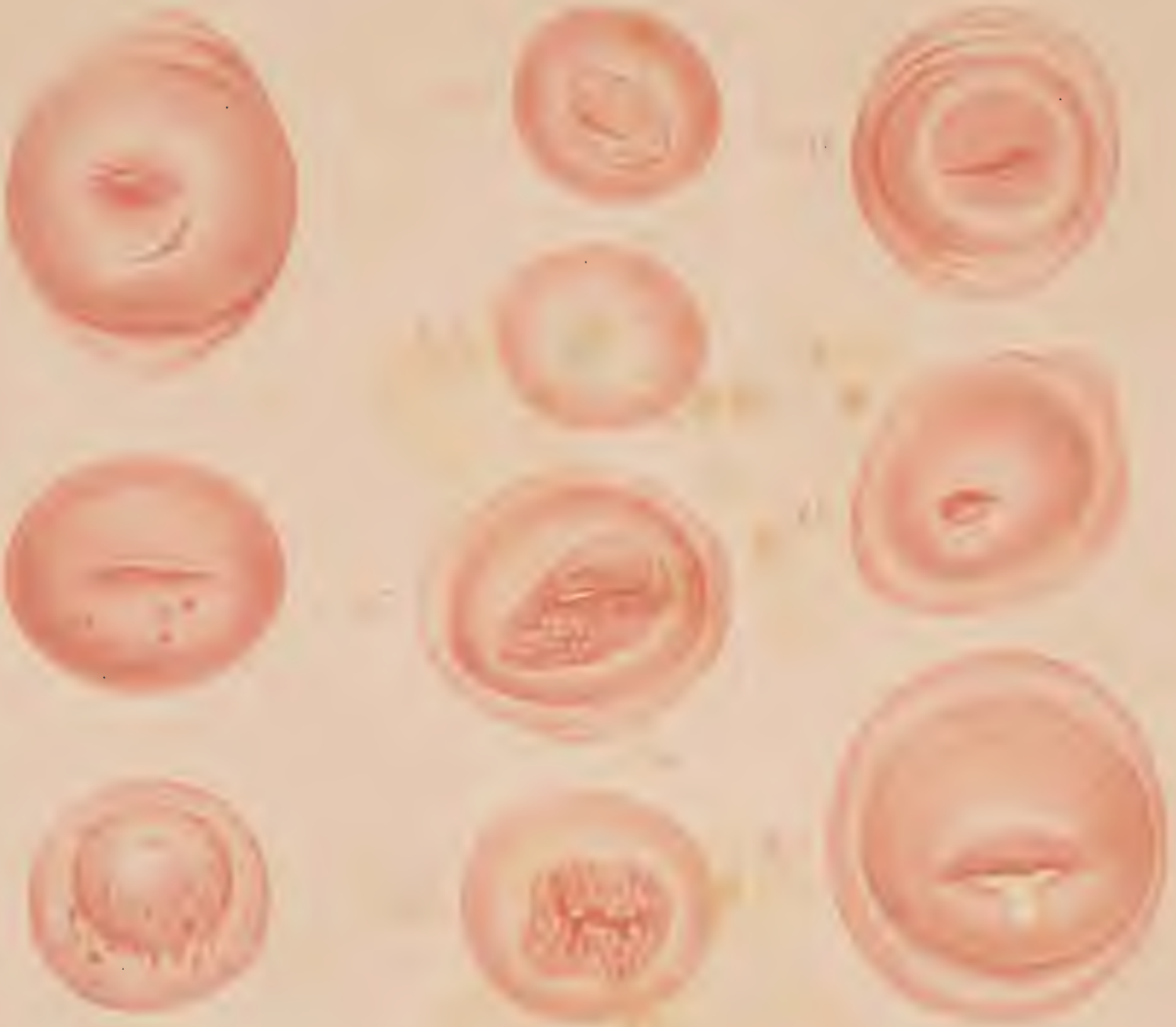


Fig. 2.

Day & Son, Lith. to the Queen.

The general ill health which most commonly occurs as symptomatic of these uterine affections, is better understood than expressed by those familiar with it. The patient, without any assignable cause, gets out of health, her appetite is indifferent, bowels torpid, skin dry and discoloured, she loses flesh, wants her usual elasticity, becomes languid, easily fatigued, and incapable of exertion, and all this may occur without any one symptom to draw attention to the uterine functions ; at most, perhaps, a slight blenorrhagia when the menses are on the wane, or ushering them in; the periodic discharge is a little in excess, or she suffers from the presence of occasional lumbar, sacral, or inguinal pain.

Attention is then directed elsewhere, and the stomach, liver, or, perhaps, spleen, is engaged with; blue pill, bitters, alteratives, and tonics tried in succession with equal ill success; and the patient and doctor withdraw from the contest, mutually dissatisfied with the result. The fact is, the "sedes malorum" has escaped detection, and it remains for the patient to resign herself to her fate, supporting, in addition to her ill-health, the character of a hypochondriac in the estimation of her unsympathising friends. All these symptoms may be ascribable to one or other of those lesions of the uterus to which we have already adverted, and until this be removed the patient's health cannot be re-established. It seems unaccountable how so trifling a variation from the healthy state, as we frequently observe, can produce such serious inconvenience to the constitutional health; we cannot at this moment satisfy ourselves why it should be so, but must rest satisfied by simply stating, "so it is."

Art. VI.—*On the Efficacy of Electricity, Galvanism, Electro-Magnetism, and Magneto-Electricity, in the Cure of Disease; and on the best Methods of Application.* By M. Donovan, formerly Professor of Chemistry to Apothecaries' Hall.

(*Continued from page* 414 *of Journal for November.*)

I have now to bring under observation the medical experience which practitioners have had of the agent concerned in galvanic, electro-magnetic, and magneto-electric phenomena. This agent is generally believed to be the same as that called into action by the ordinary electric machine; the question is one of great difficulty, but, fortunately, is not connected with the subject of our present inquiry.

Dr. Bardsley preferred galvanism to electricity. He says that, judiciously applied, it is a safe and powerful remedy in most paralytic diseases. He conceives that galvanism agrees with electricity in its sensible effects upon the body, for, like the latter, it increases the action of the arterial system, excites heat, causes strong muscular contractions, and even blisters on the skin; and produces, when too powerfully administered, sickness and faintings. When the brain is required to form part of the circuit, the galvanic influence ought to be very cautiously administered: five plates, of two inches and a quarter square, will, he thinks, in general, prove sufficiently powerful at first; and even this number ought to be diminished if violent pain and vertigo, tremors, or convulsive sobs and tears, should be occasioned by the operation. When both sensibility and irritability are greatly exhausted, it may be necessary to excoriate the skin by blisters previously to the application of the wires(*a*).

Voltaic electricity is generally conceived to have this advantage over common electricity, that the former acts more

(*a*) Edinb. Med. and Surg. Journ., vol. iv. p. 94.

deeply within the organs, the latter more superficially. Experiments were made at the School of Medicine in Paris on the treatment of disease by galvanism ; and the commission which reported on it found reason to conclude that the effects of the Voltaic battery penetrate and affect the nervous and muscular structures more deeply than ordinary electric machines(*a*). MM. Hallé and Thillay saw a man who had the muscles of the left side of the face paralysed, and who had experienced no relief from the common electric shock. Having submitted to the action of a Voltaic pile of fifty elements, the poles being connected by metallic conductors with different parts of the cheek affected, all the muscles of the face became convulsed at the moment of completing the circuit, and both heat and pain were experienced. This process being every day repeated for upwards of six months, the natural state was restored.

If it be desirable to act on parts deeply seated below the surface, the method of M. Sarlandiére may be adopted. Needles of steel or platinum, connected with the poles of the battery, are to be introduced, as in the process of acupuncturation, into the parts where the effect is to be produced. "This mode of applying electricity (says Becquerel) is the most efficacious of all those that have been employed, since it permits us to act directly on the diseased part, and it is also that which is most generally employed(*b*)." Dr. Prösch, of Hamburgh, also bears testimony to the superior efficacy of galvanism employed in this manner, especially in neuralgic pains.

It is to be here observed, that the process of acupuncture, in its simplest form, has been proved by MM. Pouillet and Cloquet, to be intrinsically a galvanic phenomenon. By plunging a steel needle into a person's arm, and causing him to hold a steel wire in his mouth, the circuit between the needle and the wire being completed by a galvano-

(*a*) *Becquerel*, vol. i. p. 138; Ibid. vol. iv. p. 385.
(*b*) *Becquerel*, vol. iv. p. 306.

meter, it was found that deflection of the magnetic needle took place; hence, they say, an electric current must have passed. They proved that this was not a current of animal electricity belonging to the man, but that it was generated by a galvanic circle consisting of one metal and two fluids, viz., steel, blood, and saliva; for when a needle and a wire of platinum were substituted, no current was established, as there was no chemical action to generate electricity, and therefore there was no effect on the magnetic needle(*a*). What part the electricity which is evolved acts in the therapeutic efficacy of acupuncture every one will decide for himself.

Professor Marianini has shewn that a difference subsists between the contractions produced by the immediate action of electricity on the muscles, which he named *idiopathic* contractions, and those that proceed from the action exercised by electricity itself on the nerves which preside over the motions of the muscles, and which he called *sympathetic*. The difference is, that idiopathic contractions take place whatever may be the direction in which the electric current traverses the muscles, while sympathetic contractions occur only when the current which traverses the nerves is transmitted in the direction of their ramifications(*b*).

The following principle he deduces immediately from this distinction. When the electric current traverses any member of an animal, the two shocks will take place simultaneously if the electricity follow the direction of the nerves; but if the electricity travel in the inverse direction, idiopathic contraction only will be produced. The contractions ought, consequently, to be stronger in the first than in the second case, a result which is confirmed by experience.

If the right hand be placed in communication with the positive pole of an electromotive apparatus, the left hand with the negative pole, and if the two communications be established

(*a*) *Journal de Physiologie*, &c., tom. v. p. 1.
(*b*) *Biblioth. Univ.* vol. xlii. p. 166.

in such a manner that the current passes with the same facility on each side, a contraction is felt in both arms every time the circuit is closed, but much more severely in the left than in the right. If the current be passed in an inverse direction, the right arm will experience a more powerful contraction than the left.

If one hand be made to communicate with the positive pole, and one foot with the negative, the electricity will traverse the nerves in the direction of their ramification in the leg, and not in the arm; consequently, the contraction is much more powerful in the leg, where it is at once idiopathic and sympathetic, than in the arm, where it is idiopathic only. The same thing happens when electricity is made to pass from the shoulder to the hand, or from one foot to the other, or from the thigh to the foot.

This difference in the force of the shock, according as the current goes in one direction or another, is greater in the case of some individuals (chiefly paralytic persons) than of others. Professor Marianini has observed, in electrizing a man affected with hemiplegia, that in passing the current of an electromotor of eighty pairs from the hand to the shoulder, the muscles of the arm suffered a contraction scarcely sensible, although it was very strong in the same place when the current passed from the shoulder to the hand.

In some individuals affected with paraplegia the difference of contraction took place in one limb only. A woman who had lost the use of the lower extremities, and the power of extending them, in consequence of inflammation of the spinal marrow, felt her left foot contract with more force when it communicated with the negative than with the positive pole of an electromotor; but the right foot always contracted with the same force whatever pole it was in communication with. This phenomenon appeared to be caused by the loss of capability of the right limb to feel the sympathetic shock, on account of the diminished susceptibility of the nerves to the

effect of the electric current which travelled in the direction of their ramifications(*a*).

The effects, peculiarly the result of the direction of the current, are thus noticed by Becquerel: Currents (he says) which have not great intensity, vary accordingly as they travel in the direction of the nervous ramifications, or in the opposite direction; in the first case, contraction ensues; in the second, pain. Practitioners should keep this distinction in view, if they employ currents of little energy.

Ritter had observed that the positive pole augments the vital forces, whilst the negative pole diminishes them. Becquerel says, that positive electricity tends to irritate, and to give life to parts which require it, when it travels in the direction opposed to the nervous ramifications.

Richerand also has recognized the principle that we should not indifferently employ the action of the two poles, especially when we operate with simple apparatus. For example, when the object is to exalt enfeebled irritability, he advises the employment of a current proceeding from a pair of silver and zinc plates, so placed that the silver shall be nearest the origin of the nerves, and the zinc over the muscle of which we wish to arouse the dulled or totally suspended energy. In this case the current travels in the direction opposite to the nervous ramifications, and an excitement is the result. We ought to add (says Becquerel) that in general the current, when it has a certain intensity, appears to act as an excitant whatever may be its direction; nevertheless, positive electricity, when it ascends to the origin of the nerve, always produces much more pain than when it travels in a contrary course(*b*).

Some of the foregoing results coincide with the observations of Dr. Quesnel, of Stockholm, who found that the parts to which galvanism was applied became much warmer, and that the perspiration of the part was considerably increased.

(*a*) *Annales de Chimie et de Physique*, vol. xlii. p. 320.

(*b*) *Becquerel*, vol. iv. p. 307.

He observed also that the zinc pole, particularly, drew blood to the parts to which it was applied and that bleeding at the nose, or headach, was frequently the consequence of its application.

The interval of time that takes place between the shocks communicated by a voltaic apparatus, no matter how transmitted, whether direct from the plates, or through the intervention of coils, is of as much importance as their strength; a rapid succession of weak shocks will, by susceptible persons, be less easily endured than much more powerful shocks given at longer intervals, and sometimes less advantageously. On this account, clock-machinery has been made use of to regulate the intervals, and such contrivances have a great advantage over rotating or vibrating electro-magnetic apparatus, which, in this respect, are unmanageable. M. Fabré Palaprat contrived an apparatus of this kind, and obtained marked benefit, where there was atony or *affaiblissement dans le jeu des organes*, provided there existed neither lesion nor inflammation, and also in lymphatic engorgement. The apparatus made use of is designated "balance clock" (*horloge à balancier*), "the isochronous beats of which establish and interrupt the communication between the poles at intervals of time longer or shorter."(*a*) M. Strenger, of Iver, employed machinery which gave the shock every second of time. By the continuance of this for four minutes every day, he was successful in forty recorded cases.

M. Fabré Palaprat produces, by means of galvanism, an instantaneous moxa, in the most deep-seated regions of the body, without causing appreciable lesions, except in the parts to which it is applied. For this purpose he introduces into the part affected a platinum needle, which he places in communication with one pole of a pile composed of large plates capable of producing energetic thermo-electric effects, whilst

(*a*) *Becquerel*, vol. i. p. 324, and vol. iv. p. 306.

the other pole is brought into connexion with some neighbouring part of the body by means of a metallic plate. At the moment when the communication between the poles is established, the needle becomes incandescent, and burns the contiguous flesh, producing intense pain, but of very short duration. Inflammation sets in after a few days, resembling that produced by moxa; an eschar ensues, and a pipe of destroyed flesh, resembling a quill, at length falls out(*a*).

The following was one of the first methods of application practised after the discovery of galvanism; and, on account of the long continuance of its effects, certainly holds out advantages. It was called the operation of the simple galvanic circuit. It will be best to describe it by instancing a case in which it was successfully employed by Dr. Grapengiesser, of Berlin, who, I believe, first introduced it.

The patient was a young lady affected for four years with a hoarseness which sometimes amounted to absolute aphonia. She used blisters, mercurials, cicuta, belladonna, &c., without any good effect. Dr. Grapengiesser then thought of increasing the action of blisters by galvanism, and accordingly having vesicated each side of the larynx with a blister the size of a shilling, he covered the excoriated spots, on one side, with a zinc plate, to which a wire of the same metal was fastened, and on the other side with a piece of silver. As soon as he brought the two plates in contact, by means of the wire, a burning sensation at those spots arose, and the larynx heaved up and down convulsively, with loud sobs or singultus. On alternately applying and removing the connecting wire, the convulsive motions of the larynx became so violent as to be almost insupportable to the patient; whereas when the metals were in continual contact with each other, the contractions of

(*a*) Ibid. vol. iv. p. 306. In the case in which it was applied to an aneurismal tumour by Mr. Hamilton, as related in the last Number of this Journal, p. 541, a small black spot was immediately formed round the aperture made by the needle.

the muscles were moderate, and the sensation less troublesome(*a*). After he had continued this process for a quarter of an hour, a watery humour began to run from the excoriated surfaces, which, however, was not so sharp as had been observed on similar occasions by Humboldt. The experiments being discontinued, he then dressed the wounds, after which the convulsive heavings of the larynx by no means ceased, but recurred from time to time till the evening. In two hours she began to speak more audibly, and this improvement continued next day, but the speech was again lost after the fourth or fifth day. The process was then repeated, but the plates were kept in their places by a well-contrived collar. The effects were the same; a great quantity of watery humour issued from the wounds, and a great deal of pituitous matter was brought up, whereby the voice became instantly clearer. On the evening of the same day, the patient could speak as loudly as any one else. The apparatus was left on all night, and next day, after the action of an expectorant and an emetic, the lady could talk as loudly as she ever did in her life.

Dr. Grapengiesser mentions that there are only two cases in which galvanism can be of use in hoarseness or aphonia, namely, when the disease proceeds from indirect debility and paralysis of the nerves serving to the voice, or from the action of a morbid stimulus(*b*). Dr. Augustin, of Berlin, also bears testimony to the good effects of the single galvanic circle, applied, as above, to blistered surfaces, over the mastoid process; he says an acrid serum issues from the sore spots.

The method proposed by Professor Marianini for employing galvanism in certain diseases, is to pass a continued current through the limb affected, during many days or weeks, with successive discharges of a battery in rapid succession, at first very weak, but gradually increasing in strength. This

(*a*) Professor Pfaff had already observed the greater violence of the shock when contact is broken than when it is made.

(*b*) Med. and Surg. Jour. vol. viii.

method he has found eminently successful in some cases of paralysis and paraplegia(*a*).

M. Nauche directed galvanism to be used in hemiplegia, in the following manner: With a view of giving a strong stimulus to the part affected, if it be the hand, it is to be placed in communication with one of the extremities of the pile, while the other extremity is made to communicate with the spinal apophyses of the sixth and seventh cervical vertebræ. If the leg be affected, the foot and twelfth dorsal vertebra, must be made to communicate with the two extremities of the pile.

In cases of great extremity, where it is necessary to increase, in an extraordinary degree, the excitement of the organic forces, one extremity of the pile must be brought in communication with the summit of the vertebral column, and the other with the spinal apophyses of the first lumbar vertebra. The patient subjected to this experiment will perceive flashes, certain savours, and sensations, more or less painful, in the stomach, in the intestinal canal and in the viscera of the breast and abdomen. The muscles of the trunk and those of the extremities will be violently contracted.

M. Nauche also states that the application of galvanism increases, in a particular manner, the actions of the parotid, lachrymal, and maxillary glands, that of the kidneys, and of the whole lymphatic system. To produce this action, the apparatus must be directed, not to the glandulous organs, but as much as possible to the origin of the nervous trunks which there distribute themselves(*b*).

In partial, and even general paralysis, galvanism has been of signal service. Out of five cases of general paralysis, Dr. Bardsley was successful in three(*c*).

Professor Marianini successfully treated a lady afflicted with paralysis, in the following manner: The Countess M. Fenaroli

(*a*) *Biblioth. Univers.* vol. xlii. p. 351.

(*b*) Philosophical Magazine, vol. xv. p. 369.

(*c*) Edinb. Med. and Surg. Jour. vol. iv. p. 94.

Sandi, aged 23, while apparently in perfect health, suddenly fell to the earth, and found that she had lost the use of her limbs, as well as all sensation. After availing herself of the aid of able physicians, without any good effect, she called in M. Marianini, who at once determined on the use of galvanism. He employed a pile composed of fifty-eight discs of copper and the same of zinc, the pairs being separated by cloths steeped in salt water. A stripe of lead, connected with the positive pole, surrounded the paralytic leg, and a similar stripe communicating with the negative pole, was made to touch (*aboutissait*) a plate of pewter; placed between the instep and the toes, every time he wished to give the shock. He commenced by giving 150 shocks to one of her legs, then the same number, in the same manner, to the other; then 300 shocks to both together, by connecting one of the poles to each foot. He allowed one or two seconds to elapse between each shock. During the interval between each series of shocks, he sometimes electrified the patient by the current, by closing the circuit for a few moments. Other times he brought the extremity of the leaden stripe, which communicated with the negative pole and terminated in a sharp point, in contact with the part of the leg the skin of which appeared to him the most delicate, and which had been previously moistened with salt water. The patient then felt a slight pain like that of a puncture, and this was the first time that she had felt any sensation. This treatment was continued for more than an hour each day, for three days in succession. The number of pairs was then increased to 75, but the shocks were so disagreeable, that it became necessary to wrap the leg, to which the stripe of lead was attached, in a damp cloth; the commotions were then somewhat less powerful, and the prickings less severe.

After a month's treatment, M. Marianini substituted for his apparatus, a *couronne des tasses* of 100 pairs of three centimetres square, charged with very salt water. From this time the shocks were carried to 800; every four or five days

an additional quantity of salt was added to the water, and the oxidated plates were changed for bright ones. Twelve days from the commencement of this treatment (viz. July 6), there was an evident improvement. On the 8th the patient experienced itching in the parts; next day she perceived, by the touch, that her foot was in contact with a wet body. On the 12th she could execute the ordinary movements of the foot, although with difficulty. On the 13th, the muscular contractions produced by fifty pairs were stronger than those previously caused by 100. On the 15th, she went out on foot, and thenceforward her improvement was rapid; she was galvanized no longer.

In some other instances it appeared that when once improvement had proceeded to a certain extent, the galvanization might be discontinued, yet the cure advanced.

Professor Marianini thus describes the condition of a patient whom he successfully treated by galvanism. Sensation was in the natural state, but the man possessed no power of voluntary motion, except in some parts of his toes. His limbs had little flexibility, and the stiffness extended to the loins, so that he was compelled to be continually stretched on his bed. A disease of the spine left him in this deplorable condition, which he had endured for twenty months. M. Marianini, at first, electrified him with 200 shocks, increasing them to 500; the number of pairs was increased from sixty to 100, according as the apparatus was more or less energetic. He passed the electricity from the right to the left foot. This method being persevered in during two months, the patient was able to make some voluntary movements with his feet. The treatment was soon after discontinued, yet he still improved, and he could walk a few steps. The galvanization was then resumed for fifteen days, at the end of which time he could walk without support, and he was considered cured.

The following incident deserves attention from all those persons, and there are many, who addict themselves to the

habit of sleeping with the arm under the head. A young man, aged 18, had fallen asleep with his head supported on his right arm; he awoke in an hour, and felt the arm benumbed; next day, finding his arm powerless, he consulted a physician, who having, without any benefit to the patient, employed sinapisms and bleedings, &c., during thirty-three days, advised electricity. At first he received 200 shocks each day, with sixty or eighty pairs, the current being directed from the healthy to the diseased hand. Sometimes the current was permitted to act uninterruptedly. In nine days M. Marianini began to see some improvement; the shocks were increased to 300; sensibility returned gradually, and soon after he was altogether re-established in health.

M. Marianini reports the case of a man who suffered from partial hemiplegia, following an apoplectic seizure, on whom the shocks of a Leyden jar, presenting a hundred square inches of coated surface, were used without benefit, at the rate of twelve shocks, increased to eighteen, each day, with an intensity indicated by 8° of Henley's electrometer. This plan, continued for fifteen days, having failed, M. Marianini determined to try galvanism. He employed a *couronne des tasses* of eighty pairs, and sometimes 100; he gave 100 shocks each day, and by degrees increased them to 400. In forty days the patient could walk without a stick, and with much less limping; he could also raise his hand to his head, and execute other movements of his arms without fatigue. He then went to the country, and when seen in a year afterwards was perfectly well.

The comparison here drawn between the effects of common electricity and galvanism, so unfavourably to the former, ought not to be allowed to influence our opinions, without taking into account that one was used for fifteen days, with twelve or eighteen shocks, and the other for forty days, with sometimes 400, and never under 100 shocks(*a*).

(*a*) *Annales de Chimie et de Physique*, vol. liv. p 366.

In the infirmary of the Baltimore alms-house, two cases of paralytic disease were successfully treated by galvanism, which deserve to be recorded (1834). The first was one of paraplegia, in the person of an Irishman, twenty-six years of age. There was considerable distortion of the spine, presenting the appearance of a well-defined tumour, of three inches diameter at the base, and about an inch and a half in height, but there was no discharge. As to the duration of this tumour, he said, "it has been there ever since I can remember, and long before, and maybe was born with me." It never occasioned him any uneasiness until a year before, when he began to feel soreness and pain in the part. When the hunch ulcerated he perceived a gradual diminution of sensibility and motion of the lower extremities, until it terminated in an entire loss of both. The paralysis was so complete that he could neither feel pinching, puncturing, cauterization, nor any other stimulating contact; but the rectum and the bladder still acted. He was also troubled with a tertian intermittent, for which, as he declared, he had swallowed "Queen Anne" (quinine) in abundance, along with "a heap of doctor-stuff more."

After the intermittent had been removed, and measures with regard to position adopted, Dr. Miller having, as he says, exhausted all the ordinary resources of art, determined on galvanism. A portion of cuticle was removed by means of a blister from two portions of the body where it was intended to act, sufficiently large to afford a basis on which to place the piles. These were composed of a flat piece of sponge, an equal portion of fresh muscle of beef or other butcher's meat, and two plates, one of silver, the other of zinc, about two inches diameter. On the denuded surface, the sponge, wet in salt water, was placed, on this the layer of muscle, over that the plate, with which was connected a conducting wire, and the whole was confined with adhesive straps. The silver

plate was placed nearest the origin, and the zinc one at the termination of the nerve.

In a very few minutes after the adjustment of the apparatus a remarkable alteration took place in the state of the circulation, and in the temperature of the paralyzed limbs; the pulse, which had varied from 96 to 112, became pretty stationary at 88, and the temperature rose from 62° to 89°. At first, the galvanic apparatus was applied and retained two or three times a day, for only half an hour at a time; but during the intervals, the good effects were lost, and it was deemed necessary to keep it in continuous operation. In a few days, sensibility in the hitherto insensible parts began to return, and mobility soon became obvious.

On one occasion the poles were, for experiment, reversed, without the patient's knowledge, when he began immediately to respire with great anxiety, and complained of "a rising up from the bottom of his belly into his throat, bringing on a sickness at heart." He became very importunate to have the plates removed, as they caused him a great deal of a new kind of pain, and said that they would instantly kill him. They were, unknown to him, restored to their former situations, when he desisted from his complaints.

The galvanic application having been unavoidably discontinued for three days, he retrograded very much in every respect, but on resumption of galvanism he soon arrived at his former improved state. After four months' perseverance in this course he was so well that he was deemed fit to be discharged, but for the inclemency of the weather, and he required no further medical attendance from that time.

The next case reported by Dr. Miller is one of general paralysis. A black boy, aged 16, had been afflicted with this disease for several months. Medical treatment being resorted to, he improved, but after awhile remained stationary, and could be no further benefited by the usual remedies. The galvanising process was, therefore, made use of, as in the pre-

ceding case, the apparatus being adjusted to his neck and one leg. In three days he could, when taken out of his bed, stand alone. In a fortnight after, he asked for crutches, to aid him in hobbling about. In another fortnight he was so well that all treatment was discontinued. In some time after, Dr. Miller called at the house of the boy's master (a barber), when he was met by his patient, who made his obeisance gracefully, grinned a pleasant display of the ivory palisadoes, and begged that "Tony should hab the honour of shaving massy Docy(*a*)."

In diseases of the eyes, the application of galvanism has been of the greatest service; there are many cases of cure on record, but I have only room for a few of the more important.

A lady, aged 30, lost the sight of her right eye, having been previously afflicted with severe headachs. M. Rossi being consulted, concluded that the disease was amaurosis, and sent her to M. Vassalli Eandi to be galvanised. The latter, having constructed a pile of thirty pairs of zinc and silver plates, with conductors of gold-twist, he caused the galvanic current to enter very near the external angle of the eye, and to issue sometimes at the eye-brow, sometimes by the ophthalmic branch which passes through the supra-orbital foramen, and sometimes very near the internal angle of the same eye. The operation was extremely painful, and caused abundant tears; but after half an hour's successive shocks, the eye began to see a little better. That he might not fatigue the lady too much, and in order to give time to nature to act, the operation was suspended until evening, when it was repeated for thirty minutes. Next day the eye began to distinguish the outline of bodies. The operation having been repeated for three successive days, the patient not only was able to see objects, but countenances, and even the pupils of the eyes.

M. Vassalli Eandi relates a case in which a young lady labouring under formidable paralytic symptoms, the eye being engaged along with the other parts, was completely relieved

(*a*) American Journal of the Medical Sciences, vol. xiv. p. 321.

after two applications of galvanism, of ten minutes each, on two days, one intervening(*a*).

In Germany, many cases of amaurosis, cured by galvanism, have been reported in the journals; some also of anosmia. In the latter, the conductors were placed behind the ears.

In Professor Loder's journal will be found some accounts of the successful application of galvanism in dimness of sight and several other diseases.

By directing electricity across the nerves of the orbit, M. Magendie has effected the cure of amaurosis that resisted the most powerful means which surgery could then employ, such as blisters, moxas, &c. This method ought to be more efficacious than any other, since the remedial agent acts directly on the nerves.

Magendie, having discovered the singular effect of the nerve of the fifth pair upon the sense of vision, remarked, that the optic nerve immediately ceases to act as soon as it is withdrawn from the influence of the fifth pair. A state of the eye is thus produced, which has a strong analogy with amaurosis. In fact, when the fifth pair is divided, the animal immediately loses its sight on that side where the nerve is cut, although the eye still preserves all the physical conditions necessary for vision. From this, one would be led to suppose that the transmission of the impression of light to the brain is made by the fifth pair, instead of the optic nerve, as hitherto believed. But it would be a mistake; for if the optic nerve of a living animal be divided, vision, and even all sensibility to the action of light, are immediately lost. The integrity of the optic nerve and of the fifth pair are, therefore conditions indispensable to the exercise of perfect vision, and the cessation of either condition leads to a state which has all the characters of amaurosis, or rather which is amaurosis itself. Thus there are two kinds of amaurosis; and we may suppose that by energetic excitation, directed to the different

(*a*) *Journal de Physique*, tom. lvi. p. 307.

branches of the fifth pair, some good results would follow. But, to effect this, means must be devised for acting on that nerve alone, without engaging the surrounding parts.

By the method of electropuncture, contrived by Sarlandière, but somewhat modified, Magendie hoped to effect this object. Many branches of the fifth pair are easily reached outside on the cranium, but they are not accessible within the orbit. The puncture of nerves is generally regarded as very dangerous; it was therefore necessary to proceed cautiously. He began by puncturing the different facial ramifications of the fifth pair, and the branches which terminate the superior and inferior maxillary nerves, without meeting any accident; the animals suffered visibly at the moment of being punctured, but nothing else occurred.

He determined then to attempt the same experiment on a young man affected with amaurosis and immobility of the pupil, on whom had been exhausted all the resources of medicine. He plunged a steel needle into the frontal nerve where it issues from the supra-orbital hole. The patient said he felt in all the corresponding side of the head a sensation similar to that which happens when the elbow is struck, a painful pricking of all the divisions of the cubital nerve. He also punctured the infra-orbital nerve, where it issues from the orbit, with a similar result. After the operation, the patient felt no injury, and was just as usual. Thus it was proved that puncturing the nerves is a process unattended with risk, although the contrary has been generally believed.

Next day he repeated the experiment, with this difference, that in place of puncturing the frontal nerve on the forehead, he sought for it in the orbit itself, nearly towards the middle of its length. After some unavoidable groping, the patient himself informed Magendie that he had punctured the nerve, for he felt the same pricking sensation as before.

Not having encountered much difficulty in finding the frontal nerve, in its passage across the orbit, Magendie wished

to act on the lachrymal nerve, which has more intimate relations with vision, as it governs the secretion of tears. After some difficulty, he found it; the patient experienced a peculiar sensation in the orbit, and immediately an extraordinary abundance of tears flowed. In making these attempts, which had no ill consequences, he remarked that the pupil contracted every time he punctured one or the other of the orbital-branches of the fifth pair. But there was no change in the state of the amaurosis. He then wished to galvanize the nerves which he had punctured, with the view of indirectly exciting the action of the retina and of the optic nerve.

Two days after these operations, he plunged the needle into the frontal nerve, and another into the superior maxillary nerve. He brought these needles repeatedly in contact with the two poles of a weak voltaic pile, composed of twelve pairs of six-inch plates. Every time the contacts were made, the patient experienced a painful commotion in the course of the nerves, and in the bottom of the orbit; the light became more perceptible, and the pupil contracted.

Magendie continued this treatment for fifteen days; the amaurosis was evidently improved; the pupil was nearly reduced to the size of that of the healthy eye; but the patient having left Paris, M. Magendie could not discover whether the improvement was permanent.

Since that time, M. Magendie has treated in the same manner, many cases of imperfect amaurosis, with or without paralysis of the muscles of the eye; and almost in every instance with very advantageous results. He has applied this treatment to an amaurosis which affected only the external half of the retina, and which was accompanied with paralysis of the upper eye-lid, and of the rectus internus and recti superior and inferior of the left eye; and he had the satisfaction of seeing in the space of three months, the whole disease disappear, and the retina and muscles of the eye resume their functions.

"Thus it is proved," M. Magendie observes, "that the punc-

ture of the orbitar branches of the fifth pair is by no means dangerous; and we learn that the puncture is accompanied by a sensation of pricking, analogous to that which one experiences when the cubital nerve is struck(*a*)."

I have translated the foregoing memoir nearly at full length, because it appeared to me to present a splendid achievement of combined science and art. It points out a mode of cure, the more valuable inasmuch as we know how little any treatment by medicine avails in this dreadful affliction.

Dr. Grapengiesser's mode of applying galvanism in amaurosis was as follows. In order to excite the paralytic optic nerve, he endeavoured to irritate the three branches of the fifth pair by means of galvanism. A silver probe, proceeding from the silver end of the battery, is introduced into the nose by the patient himself, while the operator touches the region of the frontal nerve, previously well moistened, either without interruption or at momentary intervals.

In cases where a stronger irritation is intended, a small blister should be previously applied; and then a less number of plates will be necessary. The nose becomes excoriated by the galvanic fluid, which renders its application extremely painful, so much so as to be hardly endurable by the patient. Under such circumstances, the silver probe may be applied to the upper jaw, above the upper molar teeth, in the inside of the mouth. This, often repeated, excites a violent toothache in several patients, which obliges us either to return to the first method, or to apply the silver probe externally on the cheek. It is advisable, in all cases, frequently to change the place of application. The most efficacious irritation ensues, Dr. G. conceives, on touching the cornea with the small knob of the conducting wire. This mode of application requires great caution; it provokes an abundance of tears, and sometimes occasions considerable redness of the conjunctiva, and even insupportable pain in the ear.

(*a*) *Journal de Physiologie*, tom. vi. p. 156.

For applying galvanism in diseases of the auditory organs, Dr. Grapengiesser uses two silver-wire conductors, each bent at one end, exactly in the direction of the meatus auditorius, and terminating in a small knob which must be wrapped in linen. They pass through a glass tube, which is likewise provided with a small globe for preventing its entering too far into the meatus by any motion of the patient. The whole instrument should exactly correspond with the dimensions of the auditory canal; at least the knob must entirely fill it. If the knob be not covered with linen, and if the conductor be introduced without its glass sheath, the ear will be immediately excoriated, and the application must be discontinued, as the pain cannot be endured in that state. The covered knobs, being moistened, are introduced into the meatus, also moistened; the galvanic stream, running through the nerves with great rapidity, is communicated to the auditory nerve, and occasions, in some patients, the most violent sounding and tinkling in the ears. Several patients likewise complain of giddiness, but it soon passes off. Dr. G. generally allowed the action of the galvanic battery to continue for five minutes, sometimes ten, and even half an hour; but the judgment of the physician must direct this. The conductor of the zinc side, as it acts with more energy, ought to be occasionally changed to the other ear, and *vice versâ*.

Instead of a conductor in each ear, one only may be used, the other being applied to the moistened mastoid process covered with a bit of silver; or, what is better, the latter conductor may be applied to the Eustachian tube in the mouth; in which cases, the patient perceives a sensation similar to that of a series of small globules running through the ear. The only disadvantage in this excellent method is that it sometimes induces vomiting. If the silver-wire conductor be covered with glass below its knob, this tendency to vomit is very much lessened(*a*).

(*a*) Med. and Surg. Jour. vol. viii. p. 315.

The following is a case of deafness treated by Dr. Grapengiesser, according to his plan. The patient was a boy, aged 12, deaf from his earliest childhood to such a degree that he had not learned to speak. There was evidence that the defect was in the nervous system, and did not originate in deficient structure of the organ of hearing. After the eighth application of galvanism he could distinguish feeble sounds; soon after he could hear the ticking of a watch; and by the continued use of galvanism he perfectly recovered the hearing of one ear.

The early accounts of the effects of galvanism in deafness differed very much from each other. M. Schaub, of Cassel, was said to have cured many. M. Pfingston, director of the Institution for Deaf and Dumb, at Kiel, communicated a memoir to the Galvanic Society of Paris, in which he declared that galvanism is of very little use in deafness(*a*). M. Sprenger, however, succeeded in recovering no less than forty cases of this disease; but it is said that some of them relapsed. His method was to apply a small button at the end of a metallic wire, connected with the positive extremity of the apparatus, for a minute to the tragus, for two minutes to the meatu-externus, and for another minute to the mastoid process, giving frequent shocks, by touching the negative extremity with a metallic rod, held in the moistened left hand when the right ear is galvanized, and *vice versâ*. In this way, sixty shocks were given in a minute. The longest time during which he applied these means was a month. Professor Grim, of Liegniz, in Silesia, also restored many persons who had been afflicted with deafness. M. Einhoff, of Celle, made several trials in the same disease, and failed in them: but, on changing his apparatus and method, he was more fortunate with the first four persons on whom he operated, one of whom had been born deaf. It is very probable that other cases of failure might also be traced to inefficient apparatus, or a bad method. Dr. Martens, of Leipzig, was also successful in deaf-

(*a*) Phil. Mag. vol. xv. p. 282.

ness. So also was Dr. Marcus, of Bamberg, at least so far as procuring considerable relief: and Dr. Hellwag, of Eutin, was fortunate to the same extent. The result of these numerous evidences is, that galvanism greatly relieved almost every patient labouring under difficult hearing or deafness, and cured many.

The celebrated Volta tried the influence of galvanism in a case of congenital deafness, on a girl aged fifteen years. On the third day, that is after it had been applied eight or nine times to each ear, for ten minutes at a time, in shocks repeated every second, she began to hear. In fifteen days she could perceive various noises, even when not very loud, and at a distance of some feet; although, at first, she could not perceive the loudest sounds with either ear. This improvement, in a case of congenital deafness, was sufficiently remarkable; but at the time that Volta made his report the patient was still under care, and I do not find in any Journal that he ever concluded it(*a*).

Magendie has given an account to the Academy of Sciences of a young Polish officer who, on the field of battle, was struck down, and had suddenly lost his hearing, speech, and taste. The usual remedies having failed, Magendie applied one of the conducting wires of the pile over the chorda tympani, and passed a current through. On the first application the patient heard a loud buzzing noise in his head; at the third, the sense of taste began to be established, a fact of much interest to the anatomist and physiologist, as it throws light on the origin of the chorda tympani and the functions of the fifth pair. After seven or eight applications the patient could hear a drum, a bell, or the human voice, but the tongue still remained affected(*b*).

A statement of Dr. Grapengiesser shews what a fallacy it is to suppose that diseases of much resistance can be combated by any but the higher powers of galvanism. A young lady,

(*a*) Phil. Mag. vol. ii. p. 452. (*b*) *Gazette des Hôpitaux.*

who had suffered much from "sorrow and vexation," was attacked with headach and difficulty of utterance. These were the forerunners of apoplexy; she was entirely deprived of her senses, remained speechless, and the right side was completely paralyzed. Her senses were, however, restored, but she remained incapable of utterance, and paralytic. Within four years her speech and the use of her foot were recovered, but the arm continued lame; the elbow-joint was bent by a spasmodic contraction of the muscles, and the fingers were so contracted that no power was sufficient to open her hand. Whenever galvanism was applied, this stiffness of the elbow and fingers disappeared in a moment, and she could with ease stretch the fingers and the arm; but in order to produce this effect *a battery of* 100 *pairs was required.* After the continuance of this application for a short time, the patient recovered the use of the limb, though not so well as before(*a*).

Amongst all those who have employed galvanism as a remedy, not one declares his numerous failures with more candour than Dr. Grapengiesser.

If the electricity of 100 pairs of plates was required in the foregoing case, it is difficult to believe that a single pair of plates, even assisted by a coil, can bring to bear on the patient such a quantity of electricity as, according to Dr. Grapengiesser, would be necessary for the cure of a paralytic limb. The shock of the coil may be rendered intolerable, it is true, but there is but one pair of plates employed in those electro-magnetic machines which are used in the present day, and perhaps this is the reason that we rarely hear of the surprising cures that were formerly effected. This is worth the notice of medical practitioners.

One of the most important and curious of the physiological properties of the galvanic influence is its power over the peristaltic motion of the intestinal canal, and the consequent evacuation of the fæces. The power over the peristaltic motion,

(*a*) Med. and Phys. Jour. vol. ix. p. 137.

denied by Volta, was, I believe, first observed by Grapengiesser; but the resulting effects were discovered by M. Le Roy. This property is the more valuable, inasmuch as the method of application is so simple and safe.

M. Le Roy d'Etiolle says, that if a trough, consisting of eight or twelve pairs of inch and half plates be employed, as soon as a current is established by the conducting wires from the tongue to the anus, a gentle warmth is felt in both parts; slight flashes appear before the eyes; movements are felt in the abdomen, but no general shock is communicated. If the experiment be continued during a quarter of an hour, a weight is felt in the rectum, and one or two alvine evacuations result. If fifteen or twenty pairs of plates be employed, the effects are more decided, and purging ensues, without the smallest injury to health(*a*).

It has been proved, by Mr. J. Clarkson, that the same results may be produced by the same agency applied in a different manner. A gentleman afflicted by a painful tumour in the right side, immediately under the liver, which was suspected to proceed from an obstinate obstruction in some part of the intestine, found no relief in medical treatment; galvanism was therefore resolved on, and was employed in the following manner. The terminal balls of a galvanic battery of fifty plates, each two inches square, were applied all round the hardened part, during twenty or thirty minutes, twice a day, for ten days, the skin having been previously moistened. Every application gave him more or less relief, and at the end of that period he was well. But after the application had been made for a few minutes, a motion of the bowels usually, if not always, commenced, with a rumbling noise, followed after a certain time by a full evacuation. Sometimes the call was so urgent that it became necessary to discontinue the galvanic process. Dr. Abercrombie, in commenting on this case, says, that a portion of the intestine was in a state of over-distention and inaction; that galvanism affected this part by restoring its muscular

(*a*) *Archives Générales de Medecine*, &c., tom. xii. p. 272.

action; and that the canal then recovered its healthy relations(*a*).

Here, then, is a safe, gentle, easily applied, easily regulated means of acting on the bowels to any required extent, whether the intention be to produce brisk evacuation, or to imitate the process of nature. Such, I apprehend, will be the effect of employing a greater or less number of plates. This mode of effecting an important object, and for which so many contrivances, mechanical and medical, have been made, will no doubt one day or another be duly appreciated, and, when simplified, will become as popular as mesmerism or the "domestic machine."

The continued action of galvanism on the intestinal tube, is capable of producing very energetic effects. Ritter, by merely holding in his hands the poles of a battery of 100 pairs of plates for half an hour, got actual diarrhœa.

Dr. Quensel, of Stockholm, also informs us, that a patient of a strong constitution having one day used galvanism longer than usual, had a diarrhœa soon after; and his bowels were always moved during the continued application of this influence.

An ingenious application of galvanism has been conceived by M. Le Roy d'Etiolle, which certainly deserves the consideration of the profession. It is the proposal of a method of employing this powerful agent in the reduction of strangulated hernia, and internal strangulations.

After noticing the different modes of treatment adopted by surgeons in strangulated hernia, he observes, "that the administration of purgatives, either by the mouth or the anus, by determining contractions in the digestive tube, have often succeeded in reducing strangulations when all other means had failed. But purgatives, notwithstanding their good effects, are in other respects injurious; they cannot produce the peristaltic motion of the intestines without occasioning more or less irritation, which is always dangerous, whatever may be the results. In fine, purgatives can only exert their influence on the incarce-

(*a*) Edinb. Med. and Surg. Jour. vol. xvi. p. 428.

rated portion of the intestine after having exercised it on those parts nearest the stomach, whence may result a considerable accumulation of fæces in the hernia, and increased danger in the symptoms."

But the author conceives that means may be found of determining more safe, more powerful, more prompt, and more general contractions in the digestive tube than those produced by purgatives. Already it has been found that a galvanic current passing from the mouth to the anus causes purgation more or less active. M. Le Roy describes the action of eight or twelve pairs of inch-and-half plates, one pole on the tongue, the other in the anus. Having already mentioned the effects of the experiment, I shall now proceed to connect them with others calculated to prove the benefit derivable from this mode of operation.

Having made an incision in the parietes of the abdomen of a rabbit or a dog, he drew out a portion of intestine, and placed the zinc pole of six pairs in the mouth, and the copper pole in the anus. An undulatory movement was established in the intestine previously motionless; no shock was received, nor were there any contractions in the abdominal muscles. The peristaltic motion continued even after the removal of the galvanic influence. A ligature being placed on a portion of the intestine, the contractions were weaker at that spot but more energetic in the contiguous parts, and tended to disengage the intestine from the ligature. If the two conductors were placed on the intestine, opposite each other, the contraction was much stronger, and the fæces were forcibly drawn upwards and downwards; by placing the conductors farther on, the fæces were rapidly driven forward, and the volume of the intestine was much reduced. If a portion of the intestine, containing the fæces, or gas, were tied by a ligature in such a way as to resemble strangulation, and the conductors applied, the contraction reduced the intestine to a third, or even a fifth, of its original volume, and it could then easily pass through the ligature which

bound it previously. If, instead of thus imitating inguinal or crural hernia, a third part, or half, of the diameter of the intestine only be pinched up, immediately after the contact of the poles the intestine contracts and escapes from the fingers, provided the force that held it is not too great. When the integuments were drawn over the intestine, and the galvanic fluid was made to pass to that organ by means of acupuncture needles, the same results occurred as when it was uncovered.

M. Le Roy concludes from these experiments, that in ileus, a disease almost always mortal, we may attempt the removal of the strangulation or invagination by establishing a galvanic current from the mouth to the anus, produced by ten, fifteen, or twenty couples of two-inch plates. In hernias which form an obvious tumour, a similar current may be established, but the current will be more energetic if the conducting wires be applied to the tumour, or better, if it be made to penetrate to the intestine by acupuncture needles. After having thus applied galvanism in two or three parts of the tumour, for two or three minutes, the attempts at reduction are to be renewed, and then, probably, the contracted intestine, reduced to the third or fourth of its volume, will clear itself of the opening in which it was strangulated, and will return into the abdomen. Thirty pairs of plates may be used. Four short and fine needles may be made to penetrate to the surface of the intestine, holding them parallel, and at a short distance from each other. But it is chiefly in hernia *par engouement* that galvanism is advantageous; the intestine, in a state of atony, cannot free itself from the excrementitious matter, and is therefore distended by it. The galvanic influence giving energy to that organ, the fæces will be expelled, and the symptoms will disappear. The treatment here proposed was tried on the celebrated Talma, but without effect, as he had organic disease of a portion of the intestinal tube.

To be continued.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

1. *The pathological Anatomy of the human Body.* By Julius Vogel, M.D.; translated by G. E. Day, M.A. Illustrated with engravings. London, Bailliere. 1847.

2. *Grundlinien der physiologischen und pathologischen Chemie: für Aerzte und Studirende.* Von Dr. Hermann Hoffman; mit einer tafel Abdildungen. Heidelberg. 1845.

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3. *Handwörterbuch der Physiologie mit Rücksicht auf physiologische Pathologie.* Von Dr. Rudolph Wagner, Braunschweig. 1844.

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4 *Lehrbuch der Physiologie des Menschen, für Aerzte und Studirende.* Von Dr. G. Valentin, Braunschweig.

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5. *The Microscopic Anatomy of the Human Body in Health and Disease.* Illustrated with numerous drawings in colour. By Arthur Hill Hassall. London, 1846. Parts I. to VI.

6. *Chemistry and Physics in relation to Physiology and Pathology.* By Baron Justus Liebig, M.D. London, Bailliere. 1846.

7. *Liebig's Question to Mulder, tested by Morality and Science.* By G. T. Mulder; translated by Dr. Fromberg. Edinburgh, Blackwood and Sons. 1846.

We cannot but congratulate our readers at the rapid progress which is at this time manifesting itself in all the branches of pathological science. The members of the profession in Dublin have long felt an active interest in this department of medicine; they have fully appreciated the importance of an accurate study of the material results of diseased action; and

they must now warmly participate in a glad reception of those discoveries which the unwearied investigations of their continental fellow-labourers have achieved. Pathological anatomy is in itself a department of medicine of considerable importance; but its study, as at present prosecuted, is likely to throw an illumination on physiology and therapeutics which may lead to practical results that we now cannot in the smallest degree anticipate. In the unbounded resources of chemistry, and the refined analysis afforded through the instrumentality of the microscope, the pathological student will find powers of research by which he may cultivate successfully his particular department, and also extend the boundaries of all those sciences with which pathology is connected.

In our notice of M. Lebert's *Physiologie Pathologique*, contained in our third Number, we promised soon to afford a digest of the present state of science in connexion with the important subject of tumours, in so far, at least, as they are capable of being microscopically distinguished. We are now enabled to redeem this pledge, in a manner much more complete than was at that time in our power, in consequence of the appearance of the beautiful and accurate work of Dr. Vogel.

The idea attached to the word *tumour* is very indefinite, and no distinct line can be drawn between tumours and regeneration of lost parts and hypertrophies. It is, therefore, by negative characters we are forced to define tumours.

"When pathological epigeneses do not serve to unite portions of the body severed by wounds, or to restore loss of substance; when, further, they do not, as in hypertrophy, increase the mass of an organ by the addition of new substance, similar to, and not to be distinguished from the original; but when, on the contrary, the newly-formed mass is more or less distinct from the surrounding parts, and when the scalpel of the anatomist can separate it from them and isolate it, such an epigenesis is commonly named a tumour."

But the difficulty of affording a satisfactory definition of tumours is increased by the endless variety in which they occur in individual cases. There occur as elements in their composition, not only the several tissues found in the normal composition of the organism, but also many others that are never found in the natural structure; and these several elements appear, in certain cases, under infinitely varied combinations.

"Hence a classification of tumours is extremely difficult, and all attempts to arrange them (as we do animals and plants) into genera and species must necessarily fail; this does not, however, prevent us from arranging them in some sort into groups, in order that we may the more

easily proceed in our consideration of them; but we must always bear in mind that there is no definite division between one and another of them, and that, through the various combinations of their composite elements, they offer an infinite variety of forms."

Vogel divides tumours, in the same way as Lobstein had done previously, into "the homologous, non-malignant tumours," and "the heterologous, malignant tumours;" but even this division, he says, cannot, in all cases, be strictly adhered to, for if there are not peculiar, intermediate structures, there are, at any rate, combinations of tumours, in part belonging to the one, and in part belonging to the other division, as, for instance, scirrhus, in which there is invariably a combination of homologous with heterologous elements. We know how confidently many microscopists have recently asserted the certainty with which homologous and heterologous growths can be histologically distinguished. In reference to these pretensions, the following passage, from so high an authority as Dr. Vogel, is well deserving of attention:

"Objections have recently been raised against it (*i. e.* the foregoing classification) on the ground that heterologous epigeneses depend on the same laws (cellular formation, &c.) as the normal, and that in some of them homologous formations enter, as in schirrus. This objection seems to refer only to epigeneses in the mass, and not to the individual elements. The more accurately we become acquainted with them, the more sure shall we be that in the second division of these tumours elements actually occur which are foreign to the normal organism, and that these foreign elements are the true ground of their malignity. The fact must, however, be borne in mind, that these heterologous elements cannot, at every degree of their development, be with certainty distinguished from the homologous, and consequently many cases arise in which, after the most careful histological examination, it is impossible to discover whether a tumour is of the non-malignant or malignant class. Finally, it has not always been clear wherein consisted the non-malignant or the malignant character of a tumour. It has been generally agreed that the non-malignity of a tumour consisted in the circumstance that it would not be reproduced after extirpation; those which, after extirpation, were again produced, being held as malignant. This view I regard as incorrect: tumours which are manifestly non-malignant, as, for instance, encysted tumours, may again re-appear through the same originating force which first produced their development; whilst tumours notoriously malignant may never return after their extirpation, or may even vanish of themselves, provided that the disposition to their formation no longer exists, as has been undoubtedly shewn in relation to pulmonary tubercle. The malignity which forms the grand principle of division between these two classes of tumours is connected with the very nature of the tumour itself, and depends upon its

histological elements; indeed the clear distinction between malignant tumours and unhealthy suppuration, &c., disappears; but this separation is only artificial, and not based on nature."

Vogel divides the non-malignant tumours, which are analogous to the normal elements of the body, into eight groups, viz.:

"First group, vascular tumours; second group, fatty tumours; third group, fibrous tumours; fourth group, cartilaginous tumours; fifth group, osseous tumours; sixth group, melanotic tumours; seventh group, gelatinous tumours; eighth group, encysted tumours."

These tumours are named according to their prevailing element; at the same time it must be borne in mind that each is usually formed by a combination of tissues. They may be either in immediate connexion with the surrounding parts, of which they seem to form a kind of hypertrophy, or they may be manifestly distinct growths, separated and surrounded by a membrane, which latter may consist of the normal elements of the surrounding parts, or may constitute a distinct pathological epigenesis.

These tumours follow, in all respects, the general law which governs the pathological formation of the elementary tissues.

"They further resemble cases of regeneration and hypertrophy in their physiological functions and in their further progress. Like them they exhibit various properties in their several stages of development; like them they are nourished and increased, and form persistent constituents of the body, often enduring many years before death supervenes, usually increasing and very rarely becoming smaller. It is upon these circumstances that their non-malignity depends. In those cases when they become hurtful to the organism, and even soften like malignant tumours, that depends not on their own nature, but on fortuitous external circumstances. They may, for instance, become injurious from their size, and from their pressing on surrounding parts; they may proceed to inflammation and suppuration where they are situated on the outer surface of the body, when from their prominent position they are particularly exposed to mechanical injuries, as blows, the pressure of dress, &c. They may also be combined with malignant growths, especially with tubercles and encephaloid, which may be deposited in them exactly as in normal parts of the body."

Their origin is obscure; they undoubtedly become organized out of a cytoblastema, which may become effused from a mechanical injury, and is then doubtless extravasated blood and coagulated (rarely fluid) fibrine; more frequently it is dependent on internal causes, such as locally-increased secretion with hyperæmia of the capillary vessels, and only seldom proceeds from true inflammation.

"The organization of this blastema usually follows the law of analogous formation; thus, in adipose regions of the body, tumours appear which consist principally of fatty tissue; in parts consisting chiefly of areolar and fibrous tissue, we have fibrous tumours; and in muscular coats, tumours of simple muscular fibre: under the skin we often find encysted tumours whose membranes have a histological composition analogous to that of the cutis, with glands, hair-bulbs, and epithelium. But all the relations connected with the formation of non-malignant tumours, do not admit of this mode of explanation. Many of them are quite inexplicable, as, for instance, the formation of hair, teeth, and bone in encysted tumours of the ovaries. When a tumour is once formed, it takes its share with the rest of the body in the general metamorphosis of tissue, and the part is often an active one, since most of these tumours possess considerable vascularity, and there can be no doubt that they usually owe their increase to the irritation which they set up in the surrounding parts, their vessels becoming hyperæmic, and therefore yielding more than the ordinary quantity of cytoblastema."

In the following pages, devoted to non-malignant tumours, we shall confine ourselves to the description of their microscopical and chemical characters, taking it for granted that their physical characters and general history are sufficiently familiar to our readers.

Vascular tumours (nævi, aneurisms by anastomosis, erectile tumours, &c.), after a section has been thoroughly washed, are observed by the naked eye, or by a lens, to have a cribiform appearance, the orifices corresponding with the sections of the divided vessels. On examining carefully prepared sections under the microscope, the walls of the vessels may be discerned, and between them perfect, or partially developed areolar tissue, caudate cells, and nuclei. The vessels have usually a tolerably large diameter, being very distended capillaries, small arteries, and small veins.

Fatty tumours (lipoma, steatoma, &c.) under the microscope, appear to be formed of an aggregation of fat-cells, which perfectly accord with those of the normal fatty tissue. These fat-cells vary from the twelfth to the twenty-first of a line in diameter, and are round, or else laterally compressed into a polyhedric form. They consist of an amorphous cell-wall, which sometimes, but not often, encloses an undoubted nucleus, and of fluid fat contained in the interior. The fat may be thoroughly taken up by boiling alcohol or ether. It is chemically identical with the ordinary human fat, and consists of a mixture of olein and margarin. Sometimes the latter is present in so large a quantity, that, as the body cools after death, or the tumour after extirpation, it forms acicular crystals, which appear

either singly, or in stellar groups, in the interior of the fat-cells. The cell-wall, probably, consists of a proteine compound.

When a fresh tumour of this kind is submitted to pressure under the microscope, some of the fat-cells burst, and the fat escapes from them in the form of oil-globules. Those appear, therefore, to be an artificial product.

In a true lepoma Vogel has never seen free fat-globules. In the normal fatty tissue there are vessels and fibres of areolar tissue, in greater or less abundance, between the true fat-cells; and the same is the case in fatty tumours. Sometimes the vessels, and, more especially, the areolar tissue, are very sparingly found. In other cases, on the contrary, the areolar tissue abounds, forming tough, fibrous partitions between the parcels of fatty cells. The tumour is firm and solid, assuming more or less the physical qualities of lard, in proportion as the areolar tissue abounds. It then receives the name of lardaceous tumour, (*steatoma*, or *tumeur lardaceé*). Fatty tumours are thus histologically combined with the next group, namely, fibrous tumours. Between the true fatty and the true fibrous tumour there seems an almost infinite number of transition groups.

The varieties of fibrous tumours are so numerous that it is difficult to assign to them any general characteristic. These varieties are not merely dependent on their being combined with other forms of tumour, but also on the different stages of development of the tissue.

Vogel first describes the elementary types. The more perfect form is seen, under the microscope, to consist of fibres, which can be more or less easily separated, and are sometimes very fine, sometimes tolerably thick, their diameter varying between the two-thousandth and four-hundredth of a line. The fibres of the same tumour are, however, pretty generally of nearly the same thickness. Histologically these fibres resemble either those of normal areolar tissue, in which case they are firm, and measure from the two-thousandth to the twelve-hundredth of a line; or they resemble those of the normal fibrous tissue, as of fibrous membranes and tendons, in which case they are somewhat thicker, and measure from the twelve-hundredth to the nine-hundredth of a line; or, lastly, they resemble muscular fibre, in which case they are broader, and have a diameter varying from the nine-hundredth to the four-hundredth of a line. All these fibres are rendered transparent by acetic acid, becoming gradually pale, till they disappear: occasionally, however, a few larger ones (varying from the one-thousandth to the five-hundredth of a line) remain unchanged in acetic acid; these divide in an irregular manner, and pene-

trate the tumour. These fibres, insoluble in acetic acid, correspond with the nucleated fibres of areolar tissue. On the other hand, after the application of acetic acid, there appear more or less numerous groups of oval, or, sometimes, pointed, oat-shaped nuclei, presenting occasionally a curved appearance, similar to those which appear in the normal formation of fibrous tissue. In none but mature and perfectly-formed tumours are these nuclei ever absent. We may also frequently remark between the perfect fibres, fusiform nucleated cells, apparently arrested in their development. They are found when a fresh section of the tumour has been pared off with a blunt knife, and is placed in water, under the microscope.

For the sake of simplicity, Vogel subdivides this class into *tumours of areolar tissue, tumours of fibrous tissue, and tumours of simple muscular fibre ;* at the same time he acknowledges it is frequenly impossible to follow this arrangement, for fibrous tissue, when morbidly re-produced, shews various degrees of inclination to one or other of these varieties, so that, after the most careful examination, it is not always possible to determine whether the fibrous tissue of a tumour most approximates to areolar tissue, normal fibrous tissue, or simple muscular fibre. But he considers that this division, if not pushed too far, will be found to be grounded on their true nature, and practically useful in relation to the genesis of the tumour.

These tumours present great diversity in their physical characters. The fibres may be loosely connected with each other, and the mass may be soft, flexible, more or less elastic, and coriaceous; it is then called *desmoid tumour.* Or the fibres may be closely compressed, and the mass be solid, firm, very elastic, and craunching under the knife; this is *sarcoma* proper, or *fibroid tumour.* Or it may to the unassisted senses, although not under the microscope, exactly resemble cartilage (chondroid tumour).

Again, the arrangement of the fibres is found to be very various in these tumours; sometimes running irregularly, at others forming symmetrical designs.

In their relation to surrounding organs, these tumours present the most remarkable differences; frequently shading off by insensible degrees into the neighbouring tissues, of which they seem to be mere hypertrophies; at others, separated from the adjacent parts by distinct kystoid parietes.

Fibrous tumours usually possess but little vascularity. Frequently they are combined with fatty tumours; and in such cases, according to the intimacy of the connexion, they present the most remarkable physical varieties; sometimes the

fatty and fibrous elements being closely intermingled, at others, occupying distinct parts of the same tumour.

The foregoing description applies to the more highly organised varieties of fibrous tumours; but we occasionally meet with tumours which are in great part amorphous, at the same time that they betray their relation to fibrous tumours, by containing those oval, or oval-shaped productions, already alluded to, and, which are manifestly the fibro-plastic globules of Lebert, in a stage of interrupted growth.

True *cartilaginous tumours* are rare, although, were we to judge from mere physical characters, irrespective of structure, we should suppose them to be not unfrequent.

It is as hypertrophies, and abnormal growths of bone, that cartilaginous tumours most frequently appear; but, in these cases, no exact line of demarcation can usually be detected between the cartilaginous and osseous structures. Isolated cartilaginous tumours (*enchondromata*) are more rare, and are, indeed, chiefly known through the elaborate researches of Müller.

"*Enchondroma* appears under three distinct forms: in the bones, either (1) in the interior, or (2) on the surface covered by the periosteum, and (3) in soft parts, as, for instance, glandular organs. It forms a roundish, and generally smooth tumour of variable size, which on a section being made allows even the unaided eye to recognise two distinct constituents, one fibro-membraneous, and the other grey, transparent, and soft, resembling firm jelly or softened cartilage. The latter element shews under the microscope round or elliptic cells, varying from the 150th to the 50th of a line in diameter, and sometimes even larger, which enclose a granular nucleus ranging from the 200th to the 300th of a line in diameter. These sometimes occur as primary cells, and contain several nuclei, or even one, two, or three more recently formed and proportionately smaller cells in their interior. Besides the nuclei, we also occasionally observe irregular, oblong, pointed bodies which are suggestive of bone corpuscules. These cells resist the action of acetic acid better than most other animal cells, and, in general, are but loosely connected together, being readily isolated by slight pressure: in some more rare cases there exists between them, as in normal true cartilage, an amorphous, firm intercellular substance; the entire mass in this case is firmer, and in its physical characters more closely resembles true cartilage.

"The fibro-membraneous portion appears under the microscope as fibrous tissue, arranged into sheaths or nets, in the meshes of which is lodged the cellular substance. The latter is sometimes of irregular form, but usually globular, and then frequently protrudes upon the surface of the tumour in the form of rounded eminences.

"Hence, in the rarer cases in which a firm, amorphous, intercellular substance exists between the cells (cartilage corpuscules), enchon-

droma, viewed histologically, resembles true cartilage; in the more frequent cases, on the other hand, in which the cartilage-corpuscules are more isolated, and have a fibrous tissue between them, it presents a greater resemblance to fibro-cartilage; with this difference, however, that in normal fibrous cartilage the cartilage corpuscules are more isolated and scattered in a thick net of fibrous tissue, whilst in fibrous enchondroma masses of cartilage-cells lie between bundles of fibrous tissue, just as in steatoma accumulations of fat-cells are lodged between masses of fibre. We may, therefore, regard fibrous enchondroma as a combination of the cartilaginous with the fibrous tumour."

As regards chemical composition, Müller found the harder varieties of enchondroma to yield chondrin upon boiling; the softer, such as are found in glands, afford gelatine.

We have been thus particular in describing the microscopical and chemical characters of enchondroma, inasmuch as there can be little doubt but that many of the recorded cases of *spina ventosa*, *osteosarcoma*, &c., belong to this category, but for want of a precise description it is now impossible to identify them with certainty. When this disease attacks the interior of bones, it is most frequently found in the round or cancellated; when recognised in the exterior of bones, it is usually on the flat bones, such as the ribs. Enchondroma may continue many years without material inconvenience, and acquire a great size. A tumour of this kind has been described by Gluge, which weighed nine pounds and a half.

So little is known with respect to the histology of *osseous tumours*, that we shall not delay on their consideration. It is sufficient to say, that many productions are habitually spoken of as bony deposits, which are merely calcareous deposits, in various morbid growths; and that, in those instances where bony tumours really do form, they are either in accordance with the laws of normal development, as when cartilage or fibrous tissue become ossified, or the new growth springs as an exostosis from ordinary bone, and so is obedient to the law of analogous formation. Osseous growths are peculiarly apt to be complicated with other tumours, sometimes with several, both of a malignant and non-malignant nature.

Formerly, every blackish deposit found in the organism was considered *melanosis*. It is now, however, ascertained that there are at least three morbid products, which may be deposited on the surface, or in the substance of organs, all of a brown or black colour, although very much differing from each other. One of these owes its dark colour to the presence of sulphuret of iron; like true melanosis, it appears in the field of the microscope under the form of black granules various in form,

and reaching as far as the 100th of a line in diameter. These molecules are found sometimes singly, sometimes collected together, in larger or smaller quantity, between and among the elements of the tissue. In some few cases these granules are enclosed in cells; they may be at once distinguished by disappearing upon the addition of acetic acid.

The colouring matter of the blood, modified by putrefaction or chemical agency, constitutes another matter that may be mistaken for melanosis. In melæna and coffee-ground vomiting, as well as gangrene, we have examples of this change. The black matter thus produced appears under the microscope as an undefined granular mass, with blackish-brown portions: it is not altered by chlorine or acetic acid.

True melanosis appears to be always, at first, deposited in cells, more or less similar to the pigment cells of the choroid: the cells are, however, sometimes, it would seem, subsequently absorbed, for it is not unusual to find melanotic aggregations in the lungs destitute of cells, although in other parts of the same lungs they are furnished with them. The pigment is insoluble in sulphuric, hydrochloric, and acetic acids, caustic ammonia, potash, and dilute nitric acid; it dissolves only in concentrated nitric acid, at the same time undergoing decomposition. When burned it leaves a siliceous ash, and, like most other animal principals, it contains oxygen, hydrogen, nitrogen, and carbon. Even to this day, however, it is frequently spoken of as being a deposit of carbon.

Melanotic tumours are always compound: the other histological elements may be either malignant or non-malignant. Upon the nature of the complications depend the progress of the tumour. False melanosis is intrinsically, if occurring generally throughout the system, of most serious import, as it pre-supposes an extensive decomposition of the fluids. The causes of melanosis are obscure, yet appear to be connected with analogous formation; for melanotic tumours of the eye usually spring from the choroid, those of the skin from the rete Malpighi.

In many non-malignant, and nearly all malignant tumours, there may be detected a viscid gelatinous substance, partly infiltrated amongst the other firm elementary tissues, and partly contained in appropriate spaces or cavities, sometimes in such abundance, and so greatly exceeding the other elements, that the tumour may, with great propriety, be termed *gelatinous.* The jelly-like substance in these tumours is always transparent and colourless, and sometimes fluid, resembling thick mucus; at other times firmer, like half-softened glue.

Under the microscope it appears completely amorphous, and so perfectly transparent that it is not easy to see it. Vogel describes it as coagulating, in the cases which he has seen, on the addition of acetic acid, into a colourless, striated, amorphous mass : in a case which we recently had an opportunity of examining, acetic acid did not produce any apparent effect. It is insoluble both in cold and boiling water. It has never been subjected to ultimate analysis; and it would be, therefore, premature to form any opinion as to its real nature. Müller has described a variety of gelatinous tumours, under the title of *collonema*, but which has not, as far as we are aware, been observed by others. It is described as being of a trembling, jelly-like consistence, traversed by bundles of fibres, and containing globules larger than blood-globules, and numerous acicular crystals.

Enkysted tumours are peculiarly distinguished by being enclosed in a proper membraneous sac, which isolates them from the surrounding parts. Vogel divides them into the simple or the *kystic* tumours, and the compound or *kystoid* tumours.

Kystic tumours present themselves under a great variety of forms. They have been usually classified according to the nature of their contents. Thus they may contain a fluid identical with the serum of the blood, being destitute of any proper sac, and resulting simply from a serous extravasation into a lax tissue; or they may proceed from the obstruction of an excretory duct, and the subsequent retention and accumulation of a natural secretion; in this case, neither, have they any proper walls. The third variety deserves the name "enkysted tumours" better than either of the preceding; inasmuch as it consists of a perfectly enclosed kyst, which externally is firmly connected with the surrounding parts, but internally exhibits a smooth surface, resembling that of a serous membrane, and contains a clear serous fluid, devoid of regular corpuscular particles. The thickness of the kyst varies in different cases, sometimes assuming the appearance of cartilage. Its internal lining usually becomes coated with a delicate epithelium, essentially similar to that of normal serous membrane.

In other varieties of kystic tumours the contents do not, as in the preceding, resemble the serum of the blood, but are exceedingly diverse in their physical characters. Some are like honey, others like boiled groats, others similar to a solution of glue. From those appearances they have obtained the unscientific names of hygroma, meliceris, atheroma, gummy tumour, &c. Modern histological and chemical investigations tend to

prove that in these tumours the lining membrane of the kyst takes on in these cases the functions of a mucous membrane or skin, just as in the third variety it acted as a serous membrane; and that according as this lining membrane more or less actively secretes some one or other of the materials, which the skin or mucous membrane ordinarily produce, the contents of the kysts are found to vary. Thus it frequently happens that these tumours contain a considerable quantity of epithelium, sufficient to entitle them to the name of epithelial tumours (Lebert). On other occasions a number of fatty matters—olein, margarin, cholesterin, &c.—are formed in them, secreted by actual sebaceous follicles, opening into their interior, whose existence has been demonstrated by Dr. Kohlrausch, of Hanover. Again, they may secrete horn, which may ulcerate to the surface, and gradually project, as in a case described by Sir Everard Home, to a length of eleven inches, and with a circumference of two and a half inches. Or they may develope hairs internally, which may become loose in the kyst or continue attached, of every length, from that of the down of a new-born infant, to those of the longest hairs on a woman's head. In sheep, they may contain wool—in birds, perfectly formed feathers. Sometimes teeth become secreted in them, and that, according to the normal stages of development (Kohlrausch), as far as the perfection of second dentition. But the most surprising thing is, that those teeth are sometimes found imbedded in true bone, or loose, together with portions of bone, and that in situations where the origin of the tumour, long after birth, is capable of being traced. Various hypotheses to account for the origin of these tumours have been advanced. Sir A. Cooper regarded the superficial enkysted tumours as occluded and distended sebaceous glands; and MM. Cruveilhier and Bricheteau have laboured to prove that those containing hairs, teeth, and bones, are the enclosed remains of partially absorbed fœtuses; but great difficulties present themselves to the adoption of these opinions.

The compound kysts, or kystoid tumours, are divided by Hodgkin into two classes: in the first form, a new or secondary kyst grows externally from the wall of a primary and pre-existing one; in the second variety, the development of the secondary kyst takes place in the interior of the original one. Those compound kysts are not to be confounded with the accidental proximity and cohesion of two or more independent kysts.

We not unfrequently find that enchondroma or analogous

tumours contain cavities with smooth walls, full of some kind of fluid. These are called by Müller *cystosarcoma*, on account of their fleshy stroma.

Malignant heterologous Tumours.—We have not space to enter into a general review of the distinctive nature of these tumours. For this we must refer to the masterly disquisition contained in Vogel's work. It must suffice to enumerate briefly some of the characters by which they may be distinguished from tumours of a non-malignant nature. Thus, the latter only soften and ulcerate from accidental and exoteric causes: malignant tumours, on the contrary, soften and ulcerate from an esoteric necessity, the consequence of their composition. This softening is likewise, in malignant tumours, always accompanied by an actual loss of substance, resulting from the destruction of the neighbouring tissues. The product of a non-malignant suppuration is an organized pus; in malignant ulceration, on the contrary, the discharge merely contains a detritus resembling the results of the putrefaction of organic bodies. The contact of this ichor with living tissues exerts a corrosive power quite different from the effect of a simply purulent fluid. These, amongst other characters, when taken together, point out the malignant nature of a tumour, although no one of them is in itself sufficient to afford the basis of a strict definition.

Vogel divides tumours of a malignant or heterologous nature, or *pseudoplasmata*, as he terms them, into the pseudoplasmata that are slightly, or not at all organized, and those of a highly organized character. To the former belong, 1st. the depositions of typhus; 2nd, scrofulous deposits; and 3rd, tubercle. We have already, in our review of Lebert, given the histological characters of tubercle: those of typhous and scrofulous depositions are so exactly similar, that it is unnecessary in this place to repeat the description.

The pseudoplasmata that are more highly organized constitute the class cancer, which presents itself in either of two forms, viz.: cellular cancer or encephaloid, and fibrous cancer or scirrhus. Either of these may be complicated with other pathological epigeneses, especially melanosis and colloid, and are then rather inconsistently regarded by Vogel as distinct forms of cancer. This pathologist, however, acknowledges the absurdity of endeavouring to form distinct genera and species of these diseases, and very usefully prefers enumerating and describing the various histological elements liable to be met with in this very heterogeneous group. We shall condense his account of these different substances.

1st. There occurs in carcinomatous tumours a firm, dense, amorphous substance, bearing a close resemblance to, and probably identical with coagulated fibrine. It is rendered transparent by acetic acid, and by ammonia and other caustic alkalies, and sometimes encloses molecular granules, consisting of modified proteine or fat. This substance is, doubtless, to be regarded as the solid cytoblastema of cancer, and is subsequently converted into cells or fibres, which may sometimes be very clearly detected. It is characteristic of a definite stage of the development of cancer, and is consequently often entirely absent in perfectly developed specimens. Indeed, it appears that, in some cases, cancer arises only from a fluid cytoblastema, so that, during its whole course, this substance does not present itself. In rare cases it occurs as the preponderating constituent, and then the nature of the cancer can only be recognised in more highly developed portions of the tumour; or, indeed, the diagnosis may be altogether impossible. This firm, amorphous substance is in itself not characteristic of cancer; in fact it closely resembles and appears to be identical with the ordinary solid cytoblastema of all other epigeneses, namely, coagulated fibrine.

2nd. Molecular granules, which appear to consist partly of a modified proteine compound, and partly of fat; sometimes the fat exhibits itself in the form of larger globules. Elementary granules, consisting of calcareous salts, are rare in cancer; but none of these constituents are peculiar to carcinoma.

3rd. Cells of various kinds form a very important class of elements. Sometimes they constitute nearly the whole mass of the tumour, as in encephaloid; in scirrhus, on the contrary, they are of secondary importance. These cells are of two kinds: *a*, permanent cells, which never undergo any higher development; *b*, fibro-plastic cells, or those which are capable of being developed into fibres.

The first class of cells are what are considered the characteristic cancer cells. The primary forms of these cells present no peculiarity. The nuclei vary from the 450th to the 250th of a line in diameter, are insoluble in acetic acid, and often contain nucleoli; the cells are nucleated and round, or oval, vary from the 300th to the 100th of a line in diameter, entirely dissolve on the addition of the caustic alkalies, and disappear, with the exception of their nuclei, on the addition of acetic acid.

Besides those primary forms there are others which, when associated with the primary cells, afford much stronger evidence of the malignant nature of the tumour. Such are cau-

date ramifying cells, very large cells, containing a large number of nuclei, or even enclosing perfect young cells; cells with very thick walls; double cells, formed either by the division of one or the fusion of two cells; cells filled with granules, or with granules scattered over their surfaces; cells containing dark or black granular pigment.

Between these different forms of cells there occur innumerable transitions, and they are all, doubtless, to be regarded as primary cells, in different stages of development. Although some of these forms occur principally in certain varieties of cancer, of which they may be deemed characteristic, yet there is none that can be regarded as solely pertaining to cancer. In fact, there is no such thing as a distinctive cancer cell; and, consequently, it is impossible to decide with certainty whether a tumour be cancerous or not, by the observation of a single cell under the microscope. But on examining a mass of these cells, we can often decide with certainty on their being cancer cells, from the varieties which they present, and from the occurrence of the above forms.

The fibro-plastic cells do not differ in any particular from those common in fibrous tumours, and are most commonly found in scirrhus.

4th. The fourth element common in cancerous tumours is fibre. Fibres predominate, as might be expected, in scirrhus; in encephaloid they are sometimes altogether absent. They present all the varieties described under the head of fibrous tumours. Some are analogous to those found in normal fibrous tissues; others resemble the fibres of areolar tissue; and there are others like the non-striated muscular fibre. Some are rendered pale, or disappear, in acetic acid: whilst, with others, this reagent renders their outline more clear and distinct.

5th. Blood-vessels are found in cancerous tumours. When very predominant they have been considered to warrant the establishment of a distinct form of cancerous tumour,—*fungus hæmatodes.*

6th. Most cancerous tumours contain, in greater or less quantity, the gelatinous substance previously described, to which the title of *colloid* has been given.

It is not to be forgotten that, intermixed with the foregoing constituents of cancer, we may find some of the normal tissues involved in the tumour: cellular tissue, muscular fibre, nerves, lymphatics, &c.

Our space forbids us to pursue any further the histological characters of tumours. In the foregoing classification and descriptions, we have followed, for the most part, the guidance

of Dr. Vogel. Without instituting any injurious comparison between this observer and M. Lebert, we consider him a safer instructor of the inexperienced, at least in the department we have been discussing. If less devoted a microscopist, he is less likely to be prejudiced; whilst as an excellent chemist, and a sound clinical physician, his views are characterized by an enlarged philosophy, and an able discrimination of the subordination of phenomena.

It is by the combination of microscopical, chemical, and clinical observation, that pathology must in future be advanced. We will not call hereafter that man a pathologist, who contents himself with describing the form, size, weight, and consistence of a tumour, whether it be divided into lobes, &c.; even although he may tell us, in addition, that it was examined microscopically by Mr. Blank, and found to present the characteristics of carcinoma. From this time forth we must be prepared to describe with accuracy, chemically and microscopically, each element, as well as the relative proportions of the various elements present in a diseased organ. The cheap and improved microscopes of modern times, together with the ingenious improvement, by means of which we are enabled to transfer to our object glass the laboratory of the chemist, and with facility observe the effect of the same reagent on different organic elements, and of various agents on the same constituent, leave us without excuse for the neglect of an accuracy so essential to the progress of science.

Analysis is as essential to the pathologist as to the chemist. What should we think of the geologist who would remain satisfied with the gross physical and external characters of rocks, instead of discriminating, by the aid of the test glass and the blowpipe, the mineralogical elements of which those rocks are composed. So the pathologist must learn to distinguish the various cells, fibres, oil globules, &c., which enter into the combinations that he would study. Bichat, in his method of studying general anatomy, pointed out the true mode of investigating the products of disease.

Andral deserves the credit of having first pointed out the compound nature of pathological phenomena previously regarded as simple. He shewed this to be the case with respect to inflammation; but, although his natural acuteness enabled him to detect the error, the imperfect modes of investigation current at that period did not permit him to apply the remedy. He was forced to rest satisfied with the adoption of a more accurate nomenclature, and with pointing out the insufficiency of the supposed dynamic causes,—irritation, adynamia, &c.—to

account for the material phenomena. We are in a position to arrive at results of a much higher order.

The attempt to arrive at causes, before acquiring an accurate knowledge of effects, has, in all the departments of natural inquiry, led to disappointment and error. We must, perforce, be content to learn physiology and pathology in a parallel manner to that wherein we study natural philosophy and chemistry. Syllogism must give way to induction; and, instead of imagining certain laws of life in health and in disease, and theorizing about a plus and minus vital force, we must carefully investigate normal and abnormal organization, and permit all dynamic explanations to remain in abeyance until these are accurately known. We may be permitted to speak of one hyperæmia which leads to granular exudation; of another which leads to fibro-plastic exudation; of a third which terminates in pus organization; of a fourth which generates heterologous cells; and of a fifth which has little tendency to become organized; it is our duty, moreover, by every means in our power, to discover the conditions, chemical and microscopical, of the cytoblastema of which these elements are formed, as well as the peculiarities of the adjoining parts. But if, instead of this course of observation, we amuse ourselves with speculations about vital force, we not only abandon the only path which can lead to truth, but we lose the sole clue by which we can ever hope to arrive at a knowledge of the laws of dynamic life.

"If it follow," says Baron Liebig, "according to the course of natural investigation, that general laws must be preceded by those that are more merely special, and it be granted that a just conception of life cannot be acquired without a thorough knowledge of the organism in all its parts, both with reference to the functions of individual organs in themselves, and their mutual dependence, including the consideration of the relation of form to organic matter, then it will not be denied that we are still most widely removed from the possession of a general formula, embracing the comprehension of life, and the knowledge of the causes and connexions existing in natural phenomena. So remote is this object, that there are many who still regard the probability, or even possibility, of the attainment of such general laws in physiology, as purely chimerical; while most persons are unable to distinguish psychical from corporeal phenomena, or the idea of vital power from the form of living organs."—*Chemistry and Physics in relation to Physiology, &c.*, p. 3.

Modern chemistry has, however, done much towards preparing the way for an investigation of the laws of life. It is obvious that before we can understand what life is, or are in a position

to investigate its laws, we must limit the phenomena which are produced in organized beings by the operation of ordinary physical and chemical forces. The discovery of proteine by Mulder, of Utrecht, of its identity of composition in the fibrin of ox-blood, the albumen of eggs, and the coagulated albumen of wheat,—this was a great chemical fact, pregnant with the most important physiological results. This fact led directly to the conclusion, also arrived at by the same chemist, that the essential blood of animals was prepared, as such, by vegetables. This discovery at once simplified the whole process of hæmatogenesis, previously so obscure and complicated; and we cannot but regret the paltry attempt to deprive this illustrious Dutchman of his well-earned honours. It speaks badly for the influence of high intellect and extensive learning, in rendering men more conscientious, when we find the illustrious names of Liebig and Dumas in the category of those who could stoop to such an action.

Baron Liebig, after having repeatedly acknowledged the existence of proteine; after having professed to have obtained it from substances which Mulder had not at the time examined; after bearing testimony to the accuracy of Scheerer's researches on this substance, in his own laboratory at Giessen; and after having disputed with Dumas the priority of the annunciation, that the blood of animals was in its integrity already made by plants, to the originality of which proposition neither chemist had really any claim; Baron Liebig now denies that proteine can be prepared according to the method of Mulder, falsifying the report of Mulder's process for the purpose of supporting this assertion; and maintaining that he has, for the first time, isolated the quaternary compound, which is the radical of all albuminous substances. Conduct like this is calculated to act most injuriously on chemical science.

This attack upon the reputation of a modest and venerable chemist has elicited from Mulder further researches on the properties of proteine and its compounds, which contain results of considerable value. He describes, with greater accuracy than heretofore, the properties of anhydrous proteine; he demonstrates that the fibrine of the blood is an hydrate of the protoxide of proteine; and he confirms the researches of Scheerer, Van Laer, Van Kerckhoff, and Tilanus on the bin and teroxides of proteine. We must refer for the particulars of these investigations to the English translation of his work.

It remains but to inform our readers as to the specific value of the works enumerated at the head of this article. Dr. Vogel's is a most admirable introduction to general pathology. We

are not aware whether the part on special pathology has as yet appeared: but at this period, when so much interest is felt in the relations of chemistry and histology to morbid anatomy, the present volume will be regarded as a most valuable present to the physician. The British public owe much gratitude to Dr. Day for his accurate and elegant translation; and the publisher's department is without fault.

Hoffman's First Lines constitute a most useful manual. The author most cautiously adheres to the enunciation of well-proved results, and avoids most successfully the mere playing with formula, which so frequently injures the utility of works on chemical physiology and pathology. By means of a system of tables, he affords at a glance the results of analysis by different experimenters, and thus obviates the necessity for that tiresome drudgery which is experienced by any one referring to more voluminous works. We wish some one would have the enterprize to translate this little volume.

The *Handwörterbuch der Physiologie*, edited by Dr. Wagner, is a kind of a cyclopædia, in which the articles are by different writers. The parts before us contain the following subjects: on Life and Vital Force, by Professor Lotse, of Leipsig; on Secretion, by Professor Valentin, of Bern; on Atrophy, by Professor Canstatt, of Ansbach; on the Blood and Chyle, by Professor Nasse, of Warburg; on Animal Electricity, by Professor Valentin; on Inflammation and its Terminations, by Professor Vogel; on Aliment, by Professor Valentin; on Fever, by Professor Stannius; on Phosphorescence, by Professor Valentine; on Bile, by Berzelius; on Galvanism, in its Operation on the Animal Body, by Professor Valentine; on the Brain, by Professor Volkmann, of Dorpat; on the Peculiarities of Races, by Professor Berthold, of Göttingen; on the Animal Tissues, by Professor Valentin; and on the Tissues, in their Pathological Relations, by Professor Vogel; with a variety of others by Bischoff, Lehmann, Kürschner, Krause, Bergmann, Theile, Wagner, Scheerer, &c. The enumeration of these names, so well known in this country, is in itself sufficient guarantee for the value of the work.

Professor Valentin's *Physiologie des Menschen* is one of a series, of which Vogel's work, already noticed, constitutes another link, which proposes to supply a complete system of anatomy and physiology, fulfilling the magnificent conception already attempted to be realized by Meckel. It will, when finished, form a physiological work of a high order, worthy of a place in every medical library. We must, however, be permitted to express the wish, that Professor Valentin, in

common with many physiological writers in this country, would allow professed chemists to pioneer the way for them in speculative formulæ. It does not necessarily follow, that because the numbers on either side of an equation are equal, that therefore a natural connexion exists between them. Many pseudo-chemists appear to imagine that the value of Dalton's discovery of equivalents, consists in the facility with which it permits them to extricate themselves from a dilemma.

We have been very much pleased at the appearance of Mr. Hassall's work on the microscopical anatomy of the human body, of which five parts have been published, and we have no doubt that it will be found extensively useful in spreading a knowledge of the subject. We hope to have another opportunity of alluding at greater length to this interesting serial.

Baron Liebig's last work seems to be intended to correct some erroneous modes of interrogating nature, and unphilosophical methods of induction still too prevalent. In the way of example he introduces some very interesting instances of the material dependence of phenomena, which, irrespective of the higher objects of the work, will amply repay perusal.

We are indebted to Dr. Fromberg, assistant to Mr. Johnston, of Durham, for a translation of Mülder's candid although severe, vindication of himself from the injurious insinuations of Baron Liebig. Dr. Fromberg has well executed his task.

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1. *The Brain and its Physiology; a critical Disquisition on the Methods of determining the Relations subsisting between the Structures and Functions of the Encephalon.* By Daniel Noble, Member of the Royal College of Surgeons of England. London, Churchill. 1846.

2. *Quelques Considerations en Réponse a l'Examen de la Phrénologie de M. le Professeur P. Flourens, de l'Académie des Sciences.* Par M. S. de Wolkott. Paris. 1846.

Some Considerations in Reply to the "Examination of Phrenology" of M. Flourens. By M. S. de Wolkott.

The structure of the brain and spinal marrow has been studied during the past portion of this century with great attention and success; the complicated net-work formed by the intimate interweaving of the medullary fibres has been skilfully unravelled, and we can now contemplate, with comparative distinctness, the conductors which connect the several portions

of the great nervous centres with each other. The grey part of the cerebro-spinal system has also been attentively examined, and we now understand the mode in which the fibres terminate therein, in loops, surrounded by a tissue abounding in blood-vessels, and in connexion with unyielding corpuscles. We know, moreover, that some fibres (those that connect the different parts of the cerebro-spinal system) terminate at both extremities in grey matter, in the manner referred to; whilst others, commencing in the grey part, pass from the nervous centres into nerves whose essential element they constitute. Held together by cellular connexions in the main trunks of nerves, these fibres eventually separate, and become distributed to organs more or less distant. Their ultimate ramifications terminate in modes whose analogy to the nature of their origin in the grey substance deserves to be noted, these being either by loops, or in one or many chambered cells, containing incompressible liquid.

In proportion to the improved knowledge of cerebro-spinal structures has been the advance in acquaintanceship with the functions of the nervous system. We have learned that the brain and spinal marrow are formed by the centripetal growth and union of the nerves; that these organs are, in fact, vast ganglions, in which the elementary nervous filaments are elaborately interwoven; that different parts of this fabric are connected with various uses, according to the nature of the nerves by whose growth they are developed, and thus some portions are subservient to sensation, others to locomotion; and that these several parts are held in close sympathetic communication through the agency of the fibres, which anatomy demonstrates to us as commencing and terminating in cineritious matter.

We are thus led to regard the brain and spinal marrow as an integral and most important part of the great system of nervous machinery contained in the organism of higher animals. The different nerves are united into masses for the same reason that the mesenteric and splenic veins combine to form the porta; it is a saving of space; it is a contrivance for adjusting the compatibility of other and necessary details, but it is not the creation of a new organ: no new function is called into existence by its presence; the nervous filaments which are interwoven in its substance act undisturbed by the proximity of those by which they are surrounded; all the phenomena of nervous function are as well displayed in invertebrate animals as in those furnished with a brain and spinal marrow.

Knowing the origin and uses of the various anatomical constituents of the encephalon, we are not prepared to ascribe to this organ another function, the performance of which we can find nothing in its structure fitting it to fulfil. We do not think the brain is the organ of mind, for we cannot find a single cell or fibre in it which is at liberty to think. The fibres we know to be nervous conductors; the vessels to be channels of nourishment; cellular tissue, the bond which connects the other elements, has not an idea, grave or gay, in other parts where it is more profusely distributed; and, with the exception of the little irregular corpuscles, round which the extremities of the fibres are looped, and which exist principally in the cineritious substance, we do not know a constituent of the encephalon whose duties are not ascertained. We are aware that it has been stated that every one feels that he "thinks with his head,"—that the common consent of mankind regards the brain as the seat of the soul, &c.: but what is the origin of the belief alluded to?—is it not a deduction from our own sensations? The hand feels the heat of a fire; we do not say that the hand is the organ of caloric. The eye sees various colours; we do not say that the eye is the organ of light. And, in like manner, if the brain betrays to our consciousness the sensation of thinking, it does not justify us in the conclusion that the brain is the organ of thought.

It may be said that we are confounding two dissimilar things, thought and sensation. We confess that we do not regard them as dissimilar. We have seen that the brain in higher animals arises from the junction and interweaving of nerve fibres, which, in most of the invertebrates, remain distinct, or united into numerous and distant ganglions. We have also alluded to the resemblance in the mode of termination of each nervous filament, whether in the cineritious substance or in a distant organ. Analogous organization points to an analogy of function. It may seem strange to represent the cineritious substance as an organ of sensation; but there is no anatomical or physiological reason why it should not be so. As in other vital phenomena, we always perceive it to be the influence of a something foreign to the nerve which brings into operation nervous function. One nervous filament does not call into activity the function of another, although it may be lying in close and parallel proximity; but heat, light, chemical agents, &c., at once give rise to manifestations of action in nerves fitted by the nature of their terminations for one or other of these stimuli. Now, when we feel the brain to think, what is this but the sensation of a something foreign acting on

the extremities of the nervous filaments seated in the cortical substance. The very expression implies that thought is a thing distinct from organization. If sensation be produced by a stimulus applied to the remote extremities of certain nerve filaments, voluntary motion must be the result of a stimulus applied to the encephalic termination of analogous fibres.

We do not pretend to solve the problem of mind. The modes by which perception is accomplished (and the will causes material changes), are to us mysteries that we believe it vain to pry into. They are not, however, more incomprehensible than gravity, heat, or electricity. As long as we fail to comprehend the manner in which the moon controls the tides, we need not hope to ascertain the mode in which mind and matter reciprocally act on each other.

But it being admitted that the mind is not a function of the brain, it may be said that the brain is the organ through which the mind acts, and that certain parts of the brain are devoted to the communication of certain mental operations. Now we think that this is true, and, in fact, few dogmas in physiology are better proved. The nerves of touch go to one part of the nervous centres, those of voluntary motion to a different locality; those of sight, hearing, smell, and taste, all proceed to special departments; and it is reasonable to suppose that the reaction between mind and matter, whatever its nature may be, is peculiar in each of these situations. Besides, there are filaments from one part of the cineritious substance to another, keeping up a communication between all parts of the spinal mass, and there can be little doubt that these are likewise subject to certain mental acts. Thus we may be tolerably certain that, at one place, the mind perceives the sensations conveyed to it by the nerve of sight; at another, those of sound; at a third, those of smell; at a fourth, those of taste; at a fifth, those of touch; and that, at a sixth, the will calls into activity the material change, of whatever nature it may be, which gives rise to voluntary motion. It is not necessary in this place to enter into details as to the manner in which the nervous machinery works, but we may say, that although, as has been already stated, one nervous filament in action cannot, by mere contact or proximity, excite nervous functions in another, yet it is enabled to do so through the intervention of the grey matter: thus a nerve of touch running to the posterior column of the spinal marrow, and terminating in the internal cineritious substance, may call into action the corresponding nerve of motion, which terminates in the grey substance of the anterior column, a fact placed beyond dispute

by Dr. Marshall Hall's admirable investigations; or it may excite filaments originating near it in the grey substance, and which, ascending to the encephalon, may communicate the sensation to the mind. We allude to this subject because we believe that it is by a chain of similar actions that all the different parts of the nervous system communicate with each other, and the use of that complicated system of communication which exists in the nervous centres becomes thus explained.

We have avowed our belief in the localization of certain mental operations. We have enumerated six groups of these mental acts, namely, the perceptions of the five sensations, and the volition to move; but we can find no place in the brain for any other mental act: why should we? What other possible connexion has mind with matter? The brain is the instrument of the mind; the intelligent principle uses this organ to communicate with external nature; it learns through it the qualities of created objects; it employs it as the means of acting upon these objects. But why should memory, imagination, reason, confine themselves within an albumino-oleaginous plexus? Besides, there really are no vacant apartments in the brain for the accommodation of those faculties; every part has some material function to perform. These fibres connect the two hemispheres with each other; those tie together the cerebrum and cerebellum: some communicate with the grey substance of the spinal marrow, others pass into nerves that proceed to distant organs. The cineritious substance has its own duties to perform; every part has its peculiar business; so that there does not remain a single spot where the mind could find a quiet settlement.

The foregoing are our reasons for not believing in phrenology. We do not think that the brain is the organ of mind; we regard the mind as an immaterial existence, having a connexion on some subjects with the brain, but in its essential operations acting independently. We look on the mind as being connected with the brain only in perception, which corresponds to sensation, and in volition, corresponding to motion; and as these considerations undermine the pretended foundations of phrenology, we cannot be expected to admire a superstructure which we regard as utterly baseless.

But phrenologists will demur to these conclusions. They say:

"Unless rules of investigation apply to the brain's physiology, which differ from those relating to the remaining organization, facts will be found to necessitate the admission,—*first*, that the brain is the organ

of the mind; *secondly*, that different parts of the cerebral structure subserve the manifestation of different mental faculties; and, *thirdly*, that size of organic apparatus, *cæteris paribus*, constitutes a measure of functional power."—*Brain and its Physiology*, p. 123.

We have already stated our opinions as to the extent in which two of the foregoing propositions are consistent with the present state of anatomical and physiological knowledge. With respect to the third, the modifying circumstances, even according to the admission of phrenologists, are so numerous, that it cannot be considered as of any value as a rule for investigating functions. Our limits will not, however, permit us to enter more at large into this part of the subject.

Before we conclude, we are anxious to point out two sources of fallacy which, when undetected, frequently lead persons of considerable ability to embrace the doctrines of phrenology. The first to which we desire to allude is the confounding of *instincts* with mental operations. An instinct is essentially the tendency to gratify some appetite, or indulge a pleasurable sensation, which, being yielded to, leads, for the most part, to results of the highest importance to the individual or the species; but the mental appreciation of these results is not the cause of the particular act being performed. Thus birds pair, not because they understand the necessity of procreation for the continuance of the species, but simply to indulge a sensual desire. They build nests, not, in all probability, because they foresee the consequences of hatching and the wants of their offspring, but because they feel a sensual pleasure in collecting feathers, and straw, and mud, and cementing them into cup-shaped receptacles. These instincts vary in different species, and even in different individuals of the same species. Now phrenologists regard these instincts as operations of the mind, and accordingly they speak of amativeness, philoprogenitiveness, alimentiveness, constructiveness, acquisitiveness, form, colour, time, &c., which are all, indeed, functional actions of that wonderful machine, the animal frame, that are manifested in proportion to the development of particular organs.

The second source of fallacy to which the followers of phrenology are exposed, is a neglect of that controlling law of organization called by Cuvier *the conditions of existence*. This it is produces a mutual conformity of all the parts of a living creature, so that a perfect symmetry governs the whole. This law does not merely rule in the distinction of species, but also in the identification of individuals. It is thus that temperaments become recognised in the human race; and it is from the same cause that the form of the head will be found,

to a certain extent, to vary according to the predominance of particular instincts. Phidias was no phrenologist, yet he well recognised this truth. In the Hercules Farnese we see the cerebellic region represented broad and full, corresponding to the power of the muscles by which it is sustained, and this development necessarily modifies the shape of the whole cranium. In other ancient statues we may observe similar examples of the fidelity with which their sculptors adhered to the conditions of existence; but the observation of such coincidences no more justifies the pretensions of phrenology, than the accident of many celebrated warriors having had aquiline noses is sufficient to entitle physiognomy to rank as a science.

We have been led to make the foregoing remarks by the perusal of the works whose titles are placed at the commencement of this article. These titles sufficiently indicate their objects. They are both defences of phrenology, and appear to have been specially called forth by the attack recently made by M. Flourens on this so-called science. We feel pleasure in testifying to the temperate and truth-loving spirit in which they are composed. Mr. Noble's work especially is one that reflects on him much credit, on account of the clearness of the style, and the extensive research which it displays. We do not believe in the doctrines of phrenology, but we do not the less respect those who entertain a sincere conviction of their truth.

On Disorders of the Cerebral Circulation, and on the Connexion between Affections of the Brain and Diseases of the Heart. By George Burrowes, M. D. London. 1846. 8vo., pp. 220, with six coloured plates.

A Collection of Cases of Apoplexy, with an Explanatory Introduction. By Edward Copeman, Surgeon. London. 1845. 8vo., pp. 205.

The treatise of Dr. Burrowes contains the substance of the Lumleian lectures delivered by him before the College of Physicians of London, in 1843 and 1844; it does not, however, include a complete account of the diseases referred to in the title, the object of the author being to lay before the profession his views on some important physiological and pathological doctrines, which have an immediate bearing on the treatment of cerebral affections.

Of the seven sections into which the work is divided, the three first are devoted to a consideration of the peculiarity of the circulation within the cranium, of the effects produced on the brain by alternations of vascular pressure, and to an inquiry into the proximate cause of apoplexy and other comatose affections; and the remaining four, to the establishment of the frequent connexion between affections of the brain and structural diseases of the heart.

The doctrine that no increase or diminution of the absolute quantity of blood circulating in the vessels of the brain can take place, in the ordinary state of the parts, was first promulgated by Dr. Monro in his "Observations on the Nervous System," published in 1783, and supported by arguments deduced from the laws of physics, founded on the mechanical structure of the cranium. Dr. Kellie, having embraced the views of Monro, performed several experiments on animals, sheep and dogs, to prove that when death is produced by hæmorrhage the cerebral vessels contain their usual quantity of blood; and the inference he draws is, "that in the ordinary state of the parts we cannot lessen, to any considerable extent, the quantity of blood within the cranium by arteriotomy or venesection."

Dr. Abercrombie and nearly all modern writers on diseases of the brain have adopted this inference of Dr. Kellie; but an examination of the original experiments having convinced Dr. Burrowes that this conclusion was not borne out by the facts, he resolved to resort to fresh experiments in order to ascertain the state of the cerebral blood-vessels in animals bled to death, and in those which had died from other causes; and also the effects of gravitation on the cerebral circulation.

The experiments performed by the author were three in number, rabbits being the animals destroyed in all, and they afford results altogether contradictory of the inference drawn by Dr. Kellie. Two rabbits were killed, one by opening the jugular vein and carotid artery on one side of the neck, and the other by strangulation. On examining the state of their brains after death, scarcely a trace of a blood-vessel was to be seen in the former, while in the latter every vessel was turgid with blood. Two rabbits were poisoned with prussic acid, and, before life was quite extinct, one was suspended by the ears, and the other by the hind legs. After being suspended for twenty-four hours, a tight ligature was drawn around the neck of each, to prevent any flow of blood to or from the brain, and the cranium then opened. In the former, the brain, its vessels and membranes, were pallid and altogether exsanguineous;

but in the latter they were dark and turgid with fluid blood. In the third experiment the rabbits were killed by strangulation; one was suspended by the ears, and the other laid on the side; the difference in the quantity of blood in the brain was not so great as in the second experiment, but was nevertheless very remarkable.

Dr. Burrowes has appended to his treatise drawings of the appearances presented by the brains in these experiments, and although we cannot say much for them as works of art, they corroborate fully the statements made in the text.

Hence, then, it appears that not only does the quantity of blood circulating in the vessels of the brain vary under different circumstances, but that it may be considerably diminished in quantity by blood-letting,—a point of the utmost practical importance with reference to the proper treatment of cerebral diseases; inasmuch as Dr. Abercrombie and those who think with him reject from their vocabulary the terms congestion and determination of blood to the head, as applied to affections of the brain; their doctrine being, that when any increase takes place in the quantity of blood in the arteries of that organ, there must be a corresponding decrease in that circulating in the veins, and if a decrease in the arteries then an increase in the veins. And we fully agree in the opinion advanced by Dr. Burrowes, that, though a disturbance in the equilibrium between the arterial and venous circulation may occasionally take place, there is in all such cases a change in the *absolute* quantity of blood within the cranium.

Now, how can this change in the quantity of blood circulating in the vessels of the brain, which is enclosed in a complete sphere of bone, and thereby removed from the influence of atmospheric pressure, take place? It might, perhaps, be somewhat difficult to explain this, were the cranium a complete sphere of bone, but we agree with our author in thinking that it cannot be looked on as such, when the numerous fissures and foramina which exist in it are taken into account. Dr. Burrowes lays great stress also on the quantity of extravascular serum in the cranium; which, he believes, accommodates itself (by descending into the spinal canal, and again ascending to the head) to the varying state of the vessels of the brain. The truth of this opinion, which we think was first advanced by Sennertus, we cannot at all admit, for we believe that an amount of pressure sufficient to empty the ventricles of the brain of their serum, would not be, even for a moment, compatible with life. A most important argument in favour of the inferences drawn by our author from his experiments, though

merely glanced at by him, has been advanced by Dr. Canstadt, in his recently published *Pathologie und Therapie*,—that the substance of the brain is sufficiently elastic and yielding to allow room for the expansion of the vessels by a greater quantity of blood.

Admitting, then, the correctness of the experiments performed by Dr. Burrowes, and taking into account the elasticity of the brain, we do not think there can be the least difficulty in agreeing with the conclusion drawn by him, viz., the great importance of bearing in mind, when considering various pathological states of the brain, that its substance not only contains a variable amount of blood at different times, but that it is also subjected to a considerable vascular pressure.

As our limits do not permit us to give a complete analysis of Dr. Burrowes' treatise, we shall now proceed to notice shortly some of the most important doctrines contained in the second part, and, in doing so, refer also to Dr. Copeman's collection of cases of apoplexy.

That an intimate connexion exists between structural changes of the heart and apoplexy, no physician of any experience in his profession can possibly deny; and, although no express reference to it can be found in the writings of Abercrombie, and of many others who preceded him, nearly all modern authors, both British and Continental, direct particular attention to the effects of this influence. Amongst those who have done so, we may mention the names of Bright, Andral, Hope, Bertin and Bouillaud, Richerand, Copeland, all of whom are quoted by Dr. Burrowes, and Dr. Craigie, whose valuable paper, published in the nineteenth volume of the Edinburgh Medical and Surgical Journal, and written for the purpose of calling the attention of the profession to this point in the pathology of the brain, seems to have altogether escaped his notice. In the seventeenth volume of our former series, Professor Law published some most valuable and original practical observations on the connexion between cardiac and cerebral affections, which our author has also overlooked. We cannot, therefore, agree with his statement, that "the frequency of this relation has never yet been fully estimated;" nor can we accord the same character of novelty to the views contained in the second part of his book, which we do to those propounded in the first.

The number of cases of apoplexy in which the condition of the heart is stated, collected by the author from the writings of others, and from his own experience, is 132, and in 84 of these, or 63·6 per cent., the heart was diseased. In Dr.

Copeman's collection of cases, the condition of the heart is mentioned in only 34 cases, in 25 of which, or 73·5 per cent. it was diseased. These calculations can, however, be only looked upon as approximating to the truth, when the great amount of cases, in which no reference is made to the cardiac organs, is taken into account.

Every structural change in the heart acts as a pre-disposing, and often as an exciting cause of apoplexy, but hypertrophy, with valvular disease, is present in a majority of cases. From the analysis of cases collected by Dr. Burrowes, it appears that individuals become more liable to apoplexy as life advances, there being a steady increase in each successive decennial period, from twenty to seventy years of age, while the numbers living gradually diminish. The correctness of this inference is also fully borne out by Dr. Copeman's cases; and as it appears from Dr. Clendinning's statistical tables, that hypertrophy of the heart is a change concomitant with advance in life, the conclusion as to the effect of cardiac disease as a cause of apoplexy is strengthened.

Another fact which confirms this conclusion, but which has apparently escaped the notice of our author, has occurred to us from an examination of Mr. Copeman's cases: that is, the much greater frequency of apoplexy in males than females; the proportion of the sexes attacked being about two to one; a result remarkably corroborated by the numbers given in Mr. Wilde's accurate Commentary on the Irish Census: while out of every 39 cases of hypertrophy of the heart "17 apply to women, 22 to men(*a*)."

Dr. Burrowes' observations on the treatment of apoplexy do not strike us as presenting any novel views. He agrees with most practitioners of the present day, in reprobating excessive depletion; and he lays especial stress on the necessity of carefully examining the state of the heart, in all cases,—a proceeding, we should say, never omitted by any physician of the least experience.

In the sixth section, the author describes, and illustrates by cases, the effects of cardiac disease, in producing other disorders of the brain, particularly epistaxis and headach; and in the seventh and last section he gives an account of those severe nervous symptoms which sometimes occur in the progress of acute diseases of the heart, and often completely mask the primary affection. We do not think that Dr. Burrowes has made any additions to what has been already published

(*a*) Hasse's Pathological Anatomy. Sydenham Society Edition, p. 166

on either of those subjects, and therefore we do not offer any analysis of his statements to our readers.

We cannot conclude our notice of this treatise without recording our opinion, that the gratitude of the profession is due to Dr. Burrowes for undertaking the determination of the true state of the circulation of that important organ, the brain; and for the manner in which he has executed his task. We look upon his book as a most valuable contribution to the pathology and diagnosis of cardiac and cerebral diseases.

Dr. Copeman's work consists of a collection of cases, transcribed from various books and journals, with a few from his own practice, prefaced by sixteen pages of introductory remarks by the author. As a literary production, it can be looked on in no other light than as a school-boy's task; but it nevertheless affords a useful practical commentary on the fatal effects which followed the indiscriminate bleeding that was practised in the treatment of apoplexy until within the last few years. Of 250 cases, which are described, the treatment is specified in 155, of which 129 were bled, and 26 not bled. Of the former, 51 recovered, and 78 died; while, of the latter, 18 were cured, and 8 died. Although from the manner in which the cases were collected, this result can be regarded only as an approximation to the truth, it confirms the views for some time entertained—and, we are happy to add, very generally practised now—that the treatment of apoplexy, must, like that of other diseases, be guided by the peculiar circumstances of each case.

The Œconomy of the Animal Kingdom, considered anatomically, physically, and philosophically. By EMANUEL SWEDENBORG, late Member of the House of Nobles, in the Royal Diet of Sweden, &c. Translated from the Latin, by the Rev. AUGUSTUS CLISSOLD, M. A. Two Vols. 8vo. pp. 378.

IT may perhaps be necessary to inform some, at least, of our readers, that the volumes before us are from the pen of the once-celebrated Swede, Emanuel Baron Swedenborg, who flourished during the reigns of Charles XII. of Sweden, and his immediate successors; by one of whom, Queen Ulrica Elenora, he was ennobled. This announcement would seem the more requisite, inasmuch as Swedenborg is better known, at the present day, as the founder of a religious community, styled the New Jerusalem Church, than as a scientific writer. He was, nevertheless, a man of deep learning and expansive

genius; and, until misled by religious enthusiasm, occupied a high position in the literary circles of his country, at the period in which he lived. His first appearance as an author was in 1709, when, at the age of twenty years, he published a volume of Latin poems, followed in rapid succession by numerous works on mathematics, chemistry, mineralogy, astronomy, physiology, and theology. In proof of the estimation in which he was held by his contemporaries, we may mention that he was elected a member of the Society of Sciences at Upsala; a Fellow of the Royal Academy of Sciences at Stockholm; and the Academy of St. Petersburgh sent him their diploma of association as a corresponding member. But, notwithstanding these marks of the approbation of the learned, the strong mind of the Baron, in his declining years, became the victim of a wild fanaticism. He declared that he had enjoyed a personal interview with the Almighty, who had opened to his sight the wonders of the spiritual world, and enabled him to converse with spirits and angels. From that time he bade adieu to Science, employed his time in travelling, and expended large sums in publishing mystic tracts, which declared, in his own words, "the various unknown arcana, which have been either seen by me, or revealed to me, concerning heaven and hell, the state of men after death, the true worship of God, the spiritual sense of the Scriptures, and many other important truths tending to salvation and true wisdom." He died in London, in the year 1772. Such was the author of the book before us.

The Œconomy of the Animal Kingdom was published by Swedenborg in 1740–1; and having lain in peaceful oblivion for 105 years, has been irreverently disinterred, and edited by Mr. Wilkinson, who kindly promises that, "by the blessing of Providence," the English reader shall speedily have an opportunity of perusing the whole of Swedenborg's scientific works and numerous manuscripts, in the vernacular. The work itself, though handsomely got up, and closely resembling, in externals at least, the volumes published by the Sydenham Society, is so far beneath the present standard of knowledge in the departments of anatomy and physiology, that it may be considered rather as a literary curiosity than as a scientific treatise. The Editor, however, thinks otherwise; he styles Swedenborg "the synthesis of Aristotle and Bacon," and believes that his author embraces the merits, whilst he avoids the imperfections, of these great philosophers.

The Economy of the Animal Kingdom is divided into two parts: the first is devoted to the consideration of the blood,

the arteries, the veins, and the heart, with an introduction to what is termed Rational Psychology. The second part treats of the motion of the brain, of the cortical substance, and of the human soul.

To enter upon a review of the manner in which these subjects have been handled would be mere waste of time: the anatomy is stale, the physiology is obsolete; and we hold the discussion of speculative opinions on subjects beyond the reach of human knowledge to be worse than unprofitable.

We shall, however, endeavour to give our readers, as briefly as we can, some idea of the plan pursued in these volumes.

As Swedenborg was neither a practical anatomist nor an experimental physiologist, he was compelled to avail himself of the labours of others; founding his arguments on, and drawing his inferences from their statements, without being competent to determine whether they were true or false.

Each section, accordingly, commences with numerous extracts from the works of the most celebrated anatomists and physiologists of his day, on the particular subject under consideration. From these quotations he draws a general induction; and each clause or sentence of the general induction furnishes a text on which he dilates with tiresome prolixity, obscuring a few facts in a dense cloud of misty speculation.

Our space will not admit of long extracts; but we cannot refrain from giving the following specimen of Swedenborg's style, as rendered in the translation. He closes the chapter on the composition and essence of the blood with the following passage:—

"Lastly, there is not in the whole compass of nature a single compound entity more simple and perfect than a globule of blood. Blood comprehends in every one of its spherules mere first principles, elements, and simples. Consequently it possesses potentially and virtually every single thing in the mundane system, which is producible from first principles, elements, or simples; that is, every thing which is possible. Those volatile ethereal substances which temper the spirituous fluid, are the first and only entities of their own and the following degrees; hence also they are the elements of those degrees. The volatile aerial substances are also the simples of their own and the next following degree; while the saline cube, which is the cement of the whole part, is the simple of its own degree. Although, however, it be a simple in respect to the coordinate and aggregate substances of its own degree, it is, nevertheless, both in itself and in relation to the substances of the superior and prior degrees, highly compound. For there are degrees of simplicity, as there are of universality and priority. The

sanguineous globule then encloses within itself the first and last elements, and the determined units of every degree. These elements, moreover, are so subordinated and coordinated, that each globule of blood can be laid open by distinct gradations according to its distinct elements; for at every gyre of the circulation it is actually thus opened, in order that this process may become a habit, and that this habit may be preserved; thus it is capable of producing everything which can possibly exist from first principles. Hence the infinite variety of liquids and solids in the animal kingdom, which proceed from one only fountain, which is the blood. Hence also there is not a single compound entity in the whole compass of nature, which is at once more simple and perfect than the sanguineous globule. Q. E. D."

If our readers approve of this sample, let them buy the work, and digest its contents—if they can. For our parts we are totally unable to divine the object of its republication.

A Practical Treatise on the Diseases of Children. By James Milman Coley, M.D., &c., &c.

Dr. Underwood's Treatise on the Diseases of Children, &c. Tenth Edition, with Additions. By Henry Davis, M.D., &c.

It is sometimes a great disadvantage for a class of diseases to be too extensive, and thus we have endeavoured to explain to ourselves the fact that the systematic treatises on the diseases of children are so much below the present standard of professional knowledge. Until a few years ago, Underwood was the newest and most complete work to which we could refer, and, notwithstanding the unquestioned ability of his editors, no one can deny that it is far below the pathological information we now possess. The works published since are undoubted improvements upon Underwood, but to them, in a degree, the same observation applies. Take, for example, any one of the many excellent monographs, say North's or Cheyne's, Watt's or Armstrong's, and compare them with the same subjects treated in a systematic book, and the difference is enormous, the inferiority of the latter amazing. There are vast numbers of excellent papers scattered through the periodicals, and an ample supply of monographs, so that it is not for lack of materials; it must, therefore, we think, be owing to the extent and number of the subjects treated in systematic works. The labour of research alone is very great, the difficulty of comprising everything, yet condensing so as to keep the volume within

reasonable size, almost insurmountable, and so it is evaded, and a very insufficient work is the result.

On this account, while we think it desirable that every disease peculiar to infancy and childhood should, of course, be included, and some which, though not peculiar, are yet very common during that period, we decidedly object to filling up a work on diseases of children by giving a place to every disease by which a child may be afflicted. On this account we are disposed to quarrel with the work at the head of this notice. Dr. Coley has fallen into the error (in our opinion) of endeavouring to include all the diseases to which a child is liable in his book; thus, the section on the diseases of the eyes might almost rival Mackenzie or Middlemore, and that on diseases of the skin, M. Biett. We have also the surgery of hernia and the joints, burns and scalds, warts and corns, with a special chapter on rheumatism, and another on gout!!

The ill effects of this extension of subjects are sufficiently obvious; many chapters are too short, and on many of the diseases the information given does not dispense with the necessity of consulting other authorities: to treat so many diseases properly would require, not one moderate-sized volume, but three or four.

This, however, is the principal fault we have to find with Dr. Coley's book. It is one which, we have no doubt, will be found useful.

"The practical portions," Dr. Coley observes, in his preface, "have been the result of an experience of forty years, during which time I have been engaged in recording cases, accumulating facts, and pursuing pathological inquiries. In addition to the various information afforded by my private practice, the numerous and interesting cases occurring among the poor of an extensive district, to whom I was in the habit of giving gratuitous advice and assistance, either at my own residence or at an infirmary or dispensary which I established in my native town, supplied me with opportunities rarely enjoyed for prosecuting the useful profession to which my whole life has been devoted."

The first group of diseases are those "connected with the separation of the umbilical cord," i. e. tumours and herniæ, omitting the most unmanageable of all, hæmorrhage from the navel. The next is, "hydrocephalus externus, *or* cephalæmatoma;" begging Dr. Coley's pardon, we should call this an *English* bull. Then follows a few words about tongue-tie and imperforate anus, with a rather longer chapter on club-foot, &c. There is nothing new in these chapters, and very little that is old. This brings us to the consideration of the diseases of the

eyes and eyelids, of which thirty-seven varieties occupy fifty pages. These we shall pass over, and the diseases of the skin also. The chapters on aphthæ, muguet, and gangrene of the mouth are short but good abstracts. Aphthæ Dr. Coley cures by a lotion of one grain of bichloride of mercury in an ounce of distilled water, or by the usual application of borax and honey, with a gentle purgative, and an anodyne when the intestinal canal is affected. In the treatment of gangrene Dr. Coley recommends strong caustics, nitric or muriatic acids, or the actual cautery.

The chapter on dentition is more original. The author agrees with Guersent in doubting the influence of teething in producing disease. He states that, "the diseases peculiar to dentition are such as arise from local inflammation." If by this he means that there are no secondary or sympathetic irritations sufficient to destroy life, we beg to differ from him entirely, and we really think that forty years' experience might have proved this point for him; we do not doubt, however, that many diseases are attributed to teething, of which it merely constitutes an aggravation. Dr. Coley disapproves of lancing the gums, we conclude, as he omits all mention of it.

Diseases of the œsophagus are dispatched in three pages. Much more pains have been taken with diseases of the stomach and bowels, especially with remittent fever, which Dr. Coley considers as one of the most frequent terminations of chronic dysentery. In the simple form of the disease, he recommends merely a purgative every second morning; when tympanitis is present, castor oil will be found most suitable. If petechiæ appear, sulphate of quina, with dilute sulphuric acid, must be administered. The incontinence of urine, which occasionally occurs, may be relieved by the use of the catheter once in eight hours. Sponging with tepid water affords great relief during the fever. When the fever declines, a more generous diet may gradually be allowed.

The chapter on intestinal worms contains a great deal of information.

In our opinion the section on diseases of the respiratory organs is the best in the book; it is more full, more carefully considered, and the best authorities have generally been put in requisition, although there are some remarkable omissions.

After this follow, in rapid succession, in less than a hundred pages, diseases of the heart, of the liver, of the kidneys, of the bladder, of the thyroid gland, of the cellular membrane, of the ear, of the joints, acute rheumatism, gout, burns and scalds, chilblains, hæmorrhage from leech-bites, warts, corns, &c., and

the work finishes by a section on diseases of the brain and nervous system, and specific diseases. The diseases of the nervous system are well treated, but in too brief a manner. In short, we repeat, in conclusion, that, in Dr. Coley's anxiety to include everything, he has injured his book. As we have said, there are excellent chapters in it, and abundant evidences of talent and industry, but these are lost in the mass of materials. Had half the number of subjects been omitted, we should have had a more valuable work.

The new edition of Dr. Underwood's work, which we have just received, is in some respects an improvement upon previous ones, although the labour bestowed on patching an old garment would have been better bestowed in making a new one. Dr. Davis, the editor, says, " that he has generally deemed it advisable to adhere to Underwood's arrangement, and for the most part also to retain his language and opinions, remarking, however, on the latter whenever it seemed expedient. At the request of the publishers, he has embodied Underwood's notes in the text, as also those of Dr. Merriman and Dr. Marshall Hall, whenever they could well be admitted. The annotations of the two latter writers he has distinguished by their respective initials, a form which he has sometimes omitted with regard to his own, from a wish to avoid confusion."

The great merit of Underwood consists in the practical character of his writing: one is convinced that he is mainly describing what he has himself seen, and giving, in homely but intelligible language, the results of his own practice. His great defect, at the present time, is the want of pathological knowledge, and the absence of correct definite diagnosis; a great improvement in both these departments having been made since his time. Those defects have been attempted to be supplied by the successive editors, and not unsuccessfully. Dr. Merriman is distinguished by his usual sound sense, and Dr. Marshall Hall by his acuteness, and by the application to practice of his original views. Dr. Davis, we think, has worthily followed in the footsteps of his predecessors, and added greater value to the work of his ancestors; he has supplied many deficiencies and enriched the book by cases. His remarks display an extensive acquaintance with diseases of children, and sound practical knowledge; and, on the whole, we decidedly prefer the present edition of Underwood, and recommend it cordially to our readers.

A descriptive Catalogue of the Anatomical Museum of St. Bartholomew's Hospital, published by Order of the Governors. Vol. i. London, J. Churchill. 1846. pp. 487.

The progress of pathological science has tended to lessen the value of those collections of anatomy which were begun and completed during the rise and progress of the so-called anatomical doctrine. Many of these collections were made under an exaggerated opinion of the intrinsic value of specimens which subsequent research has shewn to be of common occurrence. The original collectors, too, were more frequently anatomists than practical physicians or surgeons, and made the preparation for its sake alone, irrespective, and too often ignorant of its relation to symptoms or history. In fact the public dissecting-room furnished the principal material; and no history was or could be obtained of the case which furnished the specimen. We might compare such a collection to that of a number of specimens of the various rocks which form the crust of our globe, valuable only so far as mere mineralogy is concerned, but destitute of interest, because there was no account of their natural or relative position. As the specimen of rock has its interest from its geognostic relations, so has that of normal or diseased structure its great value from its relation to vital phenomena.

In the study of pathological anatomy in the present day these principles are fully recognised, and the value of any collection, whether of specimens, casts, or drawings, is in direct proportion to the accuracy and extent of the records of the case which furnished the specimens. We wish not to be understood as saying one word in disparagement of the noble collection of St. Bartholomew's Hospital, which reflects much credit on its founders; and if there are many specimens, the history of which is unwritten or unknown, it must be borne in mind that this museum was commenced when pathological science was in its infancy(*a*).

In the short and unostentations preface by Dr. Paget, we learn that since the printing of the former Catalogue, in 1831,

(*a*) We know of no collection in which this principle has been so effectually carried out as in that of the Richmond Hospital School; where a full and accurate history is found of almost every preparation, cast, or drawing. It is indeed a model museum, not only from the number and variety of its preparations, and its magnificent collection of drawings from the pencil of Mr. Connolly, but from the singular extent and perfection of its records. The publication of the catalogue of this museum ought not to be longer delayed.—Ed.

no less than 1035 specimens have been added to the collection, and that in all the instances in which it was possible, brief histories of the cases have been added to the descriptions of the specimens, together with reference to more detailed accounts of them, recorded in the case books belonging to the Museum.

These illustrative histories we observe to be much more full and frequent in the departments of visceral pathology than in those devoted to diseases of the bones and joints, though in the latter the specimens are more numerous.

"The general rules of description, and the arrangement of the specimens, adopted by Mr. Abernethy and Mr. Stanley, have been but little deviated from. The arrangement appears to be the most convenient for a Museum to which every year brings numerous additions, such as it would be difficult to insert in appropriate places, in a more minute classification. But the advantages of an arrangement founded on principles of pathology are sought to be attained by adding tables of reference to the descriptions of each series. By the help of these tables, it will be easy both to find any specimen in the Museum, and to study the preparations in each series in the order in which they may best serve for illustrations of the diseases of the part to which that series is devoted.

"The general Table of References is inserted, in order that certain specimens, dispersed among the numerous divisions of the Museum, may be examined in the same order as if they had been arranged in separate series, as illustrations of general pathology—an arrangement which could not have been adopted without detracting from the interest which those specimens contribute to the several series of illustrations of special pathology, in which they are now placed."

This Table of References deserves unqualified praise, as giving a peculiar value to the Catalogue and the collection, which are thus made easily available for the study of general pathology. If the student seeks information on hypertrophy or atrophy, he has but to turn to these headings, and is at once directed to specimens of these processes in a great number of different organs; and in the same way can study hæmorrhage, repairs of injuries, specific diseases, morbid growths, or the effects of inflammation; and the same principle is further carried into the separate series, so that it is equally available to the student of every branch of special pathology.

We have only to add, that the typography and general execution of the work are in the highest degree creditable to the publisher.

The Why and the Wherefore, or the Philosophy of Life, Health, and Disease: New and original Views, explanatory of their Nature, Causes, and Connexion, and of the Treatment of Disease upon a few general Principles, based upon the Laws of Nature and Common Sense; with Rules for the Preservation of Health, and Renovation of the System. The Fruit of Thirty Years' Observation and professional Experience. By Charles Searle, M.D., M.R.C.S.E., and late of E.I.C. Madras Establishment, &c. London. 1846.

To theorize is but to anticipate the progress of knowledge. The human mind is too impatient of the slow and gradual approach of truth, to rest satisfied with what our senses reveal to us of the phenomena of nature, and it, therefore, is continually endeavouring to penetrate the darkness of futurity, and dreams out what it cannot fully discover or comprehend. This tendency is universal. "Felix qui potuit rerum cognoscere causas" is a sentiment which finds its echo in every human breast; from that of the savage, who looks at the back of the mirror for the being resembling himself, to that of the philosopher, who predicts the discovery of a planet as yet unseen by any of the human race. A cause is but the keystone of a theory—that which combines and links together the individual facts. A theory is but the arrangement of phenomena, so as to shew the invariable antecedence of a something, called the cause. All theories are of two kinds: those in which the cause is something material and demonstrable, and those in which the existence of the cause is only supposed. The fall of an apple suggesting to the mind of Newton that, possibly, *all* bodies, in all space, might fall towards each other in like manner, or, in other words, that those principles and formulæ, which Kepler and others had found to be expressive of terrestrial gravitation, might be equally applicable to the motions of the heavenly bodies, was a *theory*, which, being proved to accord with the facts in all the cases in which it could be tried, has led to the establishment, on a probability amounting to a practical certainty, of a vast number of other propositions which could not otherwise have been arrived at. Newton's query as to an universal ocean of imponderable ether, and his supposed pear-shaped particles of light, are also theories, but of a very different character. The first is but an induction, with the conclusion anticipated; the others it is as difficult to prove to be true as false, and the result is of no manner of importance. In the first we have but to prove the relation of

existing things; in the second we have first to prove the very existence of the things whose mutual influence we would explain. The value of all theories is derived from their being more or less correct and comprehensive expressions either of the actual state of knowledge, the reasoning, or the opinions of the time. Hence it follows, that the number of theories must be indicative of the force and independence of individual opinion, and their duration of the progress of knowledge. The more extended the sway of any one theory, the more imperfect the state of science; and the longer its duration, the slower the increment of knowledge. In the days of Raymond Lully, or Albertus Magnus, or even of Bacon or Boyle, it was not very difficult for a man of ordinary talent to reduce to a few propositions, or even to comprehend in a single theory, all the medical knowledge that had then been amassed. Formerly, also, original observers were few in number, and fearful of venturing from the beaten path in which they had been taught to tread. The influence of authority was inculcated and enforced by all the principles and practices both of politics and religion; and if the great Doctor so and so declared, *ex-cathedra*, that the morbid appetite in diabetes was caused by the voracity of an animal inhabiting the stomach, he who asked where the said animal disposed of his fare was only laughed at for his stupidity, or punished for his obstinacy. In such times, theories of disease extended far and lasted long. It was only when the fading reputation of their first propounder allowed their merits to be freely canvassed, and when new facts were discovered, which it was impossible by any ingenuity to make the theories explain, that their real worthlessness became at length apparent, and they were compelled slowly and reluctantly to give way to other explanations, newer, but as vain.

In modern Europe the science of medicine has lost most of its mysticism, and all its dogmatism. Knowledge is now not confined to a few individuals of the privileged classes, and for half a century, at least, the medical observer's motto, particularly in France and this country, has been "Nullius addictus jurare in verba magistri." There are now no *medical schools*, in the sense in which the phrase was formerly employed, but independent and indefatigable observers are to be found everywhere, whilst executioners, called critics, stand ready to cut up and tear to pieces the few remaining votaries of mere authority and dogmatism who may attempt to stay the progress of a more enlightened eclecticism. The knowledge of disease has

consequently become so vast a science, that, probably, there is no intellect equally acquainted with all its departments; and the attempt, even cursorily, to read all that is daily published on the subject, much less to comprehend what has already been written, would be as hopeless as the endeavour to number the particles of which the mass of the earth is composed. It is this vastness and ceaseless increment which impresses on modern medicine its peculiar and characteristic features. Its golden rule is beautifully expressed by the first proposition of the Novum Organon—"Homo naturæ minister et interpres tantum facit et intelligit quantum de naturæ ordine re vel mente *observaverit :* nec amplius scit aut potest." On the other hand, all the various systems of charlatanism are either the result of a wilful attempt to delude, or are the *idola specus* of men of an imaginative turn of mind, who, however vast their book-knowledge, have not been in the habit of comparing their ideas with the immutable standard of nature, except for the purpose of finding out loose analogies, which may serve to give countenance to the systematic schemes which they have worked out in their closets. *Charlatanism is but medicine as it existed in the darker ages.* A single fact, badly observed, and worse understood, would then suffice to originate a theory which should explain the whole series of phenomena with which it had some remote connexion; and, assuredly, unsupported assertions, loose analogies, hasty generalizations from few and ill-observed particulars, occult causes, obscurity, mysticism, and vain and groundless pretensions to novelty and importance, were not more characteristic of the philosophy of Arnoldus de Villa Nova, Olaus Borrichius, and Raymond Lully, than they are of homœopathy, or any of the other heterodox systems at present in vogue.

In our examination of homœopathy and homœopathic writings, in the first Number of the present series of this Journal, we alluded to the curious fact of the Germanic origin of most of the current medical delusions, viz.: phrenology, mesmerism, *Reichenbachism*, homœopathy, hydropathy, &c. &c.

> Quis nescit, Volusci Bithynice, qualia demens
> Ægyptus portenta colat?

The reason of this strange tendency would form an interesting subject of an inquiry, which we shall probably enter upon at a future occasion, but at present we can only recall to the reader's recollection a few undoubted facts in illustration of it. In the *Allgemeine und specielle Pathologie und Therapie* of the celebrated Professor Schönlein, recently published, we have the most caba-

listic jumble of metaphysics, physics, and practical medicine, that we have ever fallen in with; and whilst galvanic, magnetic, telluric, and lunar influences, are as busy playing their mischievous pranks with our "mortal coil" as the genii in an Arabian tale, the *post hoc, propter hoc* mode of reasoning is carried to its very *ne plus ultra,* in order to drag in an itch, or some such malady, occurring years before, that it may afford its aid to these various mystic agents in *accounting for* the origin of disease. Again, Liebig's explanation of the different types of fevers, by differences in the kind of *fermentation* produced in the blood by *miasmata* (both mere names representing nothing); Reichenbach's ascribing the cold felt in churches to the burning of the candles; more tranquil sleep in some rooms than others, to the position of the body in reference to the magnetic meridian; and the "rapture of the kiss," to the influence of a brush-like magnetic aura from the female lips; Hahnemann's attributing the origin of all diseases to itch, syphilis, or sycosis, and his treating all patients with doses so small that, on his principles, one single grain of any medicine would have been many thousand times more than sufficient for the medication of the entire human race; Mesmer's clairvoyance, transposition of the senses, and prophetic announcements and revelations; Priesnitz's assertion of the invariable and infallible efficacy of plain water as the true *elixir* (from *lix,* water) *vitæ,* or *universal medicine;* and—as the crowning point of all, which was alone wanting to complete the picture—the *transmutation of metals,* effected by Dr. Osius, of Hanan, and others(*a*) : these, and a host of similar delusions, which have their advocates and originators living and speaking amongst us, are all so little in accordance with the Cartesian and Baconian philosophy of modern times, and so perfectly similar to—nay, identical with—the imaginings of other days, that when we allow our minds to be occupied with them, we can scarcely believe that it is in the nineteenth century that we find ourselves, and not in the ninth. Mr. Searle's work, the title of which will be found at the commencement of this article, is an English specimen of the same school; but, with all the obscurity and mysticism of the Germans, it has very little, indeed, either of their learning or originality. The whole genus,

(*a*) *Medicinische Annalen, Herausgegeben Von den Mitgliedern der grossherzoglich—badischen Sanität-commission in Carlshrue,* &c., 8 Bd., 2 Heft, 1842; *Osterreichische Medicinische Wochenschrift.* Vienna. Nos. 35, 36; Aug. 27 and Sep. 3, 1842; British Journal of Homœopathy, vol. i. p. 99. We might also refer the reader to various places in Dr. Prout's works, where the Doctor at least very closely approximates to the notions of the alchemists.

and more particularly the tone and manner of the book before us, is accurately characterized in Butler's lines:

> Men's actions grow more bold and confident
> The further they're beyond their just extent;
> As smatterers prove more arrogant and pert,
> The less they truly understand an art;
> * * * *
> Can tell as easy how the world was made
> As if they had been bred up to the trade:
> And whether chance, necessity, or matter
> Contrived the whole establishment of Nature;
> When all their wits to understand the world
> Can never tell why a pig's tail is curl'd,
> Or give a rational account why fish,
> That always use to drink, do never piss.

Mr. Searle sets out with no less an attempt than to explain what life is; and by some kind of logical necromancy, which he does not lay before the reader, he arrives at the conclusion that life and electricity are one and the same thing.

"*The Principles of Life*,—that is to say, the actuating, motive, or nervous power—the 'vital force' of Liebig—is, however, electricity, evolved from the blood (a compound of air and nutriment), under the excitement of caloric, the body's temperature, and its pre-existing electrical or vital condition. This evolution takes place more particularly at the extreme points of the blood's circulation, in the capillary vessels, or those intermediate, the arteries and veins, in which the final changes in the composition of the blood are effected. These vessels entering into the composition and structure of every organ and part of the body, and constituting by their number the principal part of their substance, fulfil the purposes of nutrition, assimilation, and secretion,—the primary and fundamental functions of life."—p. 4.

From various allusions in the course of the work, to experiments by Wilson Philip, Mattucci, and others,—experiments which our author evidently in no wise understood,—we can see that Mr. Searle has no idea of the distinction between nervous irritability, which Galvani was the first to ascribe to electricity, and that power by which the tissues attract to themselves the similar (and not *opposite*, as in chemistry) particles constituting their growth; a process so totally without its analogue in mere physics, that much of our advance in medicine may justly be ascribed to the *creation*, by Barthez, of a distinct term to represent it in our reasonings.

We have no intention of following our author through his endless hypotheses, which are never either worked out fully, or applied to unite together detached facts,—the only purpose for which an hypothesis is at all admissible,—but we purpose

quoting *exempli gratiâ*, one or two passages illustrative of his new and original method of treating disease, which is so much vaunted in the title as being "based on reason and common sense," and thereby, of course, contradistinguished from the practice of all contemporaries.

Having established, though we know not how, that "health consists in a due action of the capillary vessels," and disease in a disorder of the functions of the same vessels, he further tells us, that this disorder must "consist in a condition of *congestion*, or passive fulness; or of *irritation*, or preternatural excitement; or of *inflammation*, or extreme excitement:" in the remedying of which said states of capillary congestion, irritation, and excitement, the whole art and mystery of medicine exclusively consists. Our author then proceeds:

"If the treatment of all disease may be thus embraced in a few leading principles, our remedies are necessarily reduced proportionably in number also. And as the principal and most important remedies in the treatment of these affections of the capillaries appear to consist in calomel and blood-letting, I have next treated of these remedies, explaining the indications they fulfil, their operation, and the influence they possess, and the necessity for caution in having recourse to them. And in reference to blood-letting (on which subject much prejudice exists), I have in the Supplement, when treating of renovation of the system, endeavoured to make it appear that, judiciously employed, it is a much more harmless practice than is generally supposed;—that Nature often directs us, by the bleeding of piles, &c. to resort to it;—and that life and the nutrition of the system are dependent principally upon the newly-formed blood, or the materials of diurnal accession to it, rather than upon the *antiquated* stream. It is also shewn that calomel, judiciously employed, is quite as harmless in its character as any other remedy of equal efficacy; and that it possesses, withal, virtues exclusively belonging to itself."—p. xxi.

Referring to the part of the work alluded to in the commencement of the foregoing extract, we find two sections (368, 369) headed thus: "*Facts in proof of the Utility and Harmlessness of Blood-letting;*" and, "*The newly-formed Blood the Source of Life and Nutrition.*" The substance of which is shortly this, that the author, during his Indian compaigns, found that the men who had bleeding piles were exempt from the diseases to which their less fortunate companions in arms were exposed!

The same blood-thirsty tendency is evinced throughout the entire work, bleeding and calomel being the remedies for even insanity and Bright's disease; in the latter case Mr. Searle gives also tartar emetic, or balsam of copaiba! We have often heard continental practitioners accusing the English of looking

on calomel in the light of an universal remedy; but the following is the first public announcement of a belief, which we fear is, amongst our neighbours, but too common:

"*Calomel; its Value as a Remedy.*—The fruits of my experience justify me in declaring, that if there is any single remedy in the cure of disease, meriting the name of *universal*, that remedy is calomel. The explanation I have given of its operation, and the universality of its influence on the system, in exciting the functions of all the organs, and increasing all the secretions, render it evident, I conceive, that it fulfils indications of one kind or other in the treatment, with few exceptions, of every disease—which are all, it may be truly said, with very few exceptions indeed, based upon depression of the active energies of life." —p. 90.

A little further on, we are assured, "as the result of thirty years' experience," that "calomel is as harmless as iron, or any other of the numerous articles of daily remedial application"!!! —p. 91. In short, we should say, notwithstanding all the flourish in the title and Preface, that the book contains nothing new that is true, and nothing true that is new; whilst the connexion of the ideas is so hard to trace, and the meaning is so often buried under a mass of unnecessary and high-sounding words, that the attempt to disinter it is, to use an expressive Irish phrase, like "looking for a needle in a bundle of straw;" and we fear that any of our readers who may unfortunately have purchased the work, allured by hopes of a great discovery, will be tempted, ere they get half through it, to imitate the celebrated Ernesti, when, having long pored in vain over a misty passage in Persius, he at last, in disgust, threw the volume into the fire, exclaiming, "si non vis intelligi debes negligi." We should ourselves have acted in like manner, had not our attention been called to the work in such a way as left us no alternative but to review it.

It is but justice to Mr. Searle to add, that, notwithstanding the truth of the foregoing criticism, his writings shew him to be possessed of considerable powers of observation and knowledge of books; and had he thought less of being an inventor of a system, and a discoverer,—in fact, had he been less emulous of the Germans, to whom he so often refers,—he would either not have have written at all, or he would have sent forth to the world something very different from what lies before us. In illustration of this morbid appetite for theoretic fame, we must quote the following egregious specimen of *Baileyism*:

"As it will be discovered that the views with which this work abounds correspond in a great many particulars with those for which

Liebig has obtained so much renown, I must be permitted to observe, that in all these particulars I may venture to say, without fear of contradiction, that Liebig has followed in *my* wake—not I in his. And without making any mean accusations, or arrogating to myself claims which are not justly my due, I can truthfully say, that if he have not derived, he nevertheless has had abundant opportunity of deriving those views from a work published by me as far back as 1830, entitled, "Cholera, its Nature, Cause, and Treatment, with original Views, physiological, pathological, and therapeutical, in relation to Fever, the Action of Poisons on the System, &c.; to which is added, an Essay on Vital Temperature and Nervous Energy—explanatory more particularly of the Nature, Source, and Distribution of the latter;"—a title which, it is obvious, embodies the subject-matter of Liebig's celebrated work on Animal Chemistry, in its application to Physiology and Pathology, and first published in 1842, twelve years after the date of my work—and which, I beg leave further to state, was immediately after publication translated into the language of Germany, by the then existing Professor De Graef, of Berlin; and from the celebrity of the translator, and the interest of the subject,—Cholera, which at that time first made its appearance in Europe,—it obtained, as I well know, very extensive circulation all over Germany.—I shall, I trust, be excused saying thus much upon this subject, but less I could not say, in justification of myself."—p. xxx.

Yet, notwithstanding all this, it was only when his work was passing through the press that Mr. Searle hit upon that, we believe most absurd, theory of the action of saliva, which Liebig put forth in his book years ago.

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1. *Quarantine and the Plague: being a Summary of the Report on these Subjects, recently addressed to the Royal Academy of Medicine in France, with Introductory Observations, Extracts from Parliamentary Correspondence, and Notes.* By Gavin Milroy, M.D., &c. London, 1846. Pamphlet.

2. *Compte rendu des travaux de la* 14^{e} *Session du Congrès Scientifique de France sur la Peste et les Quarantaines.* Gazette Médicale de Paris. Nov. 28th, 1846.

Account of the Proceedings of the fourteenth Scientific Congress of France, on the Subject of Plague and Quarantine.

3. *Comptes rendus des Séances de l'Académie de Médécine Discussion sur la Peste et les Quarantaines. In Gazette Médicale de Paris and Gazette des Hôpitaux Civils et Militaries, &c.* March to December, 1846, inclusive.

Report of the Proceedings of the Academy of Medicine. Discussion on the Plague and Quarantines.

4. *A Treatise on the Plague: more especially on the Police Management of that Disease. Illustrated by the Plan of Operations successfully carried into effect in the late Plague* [1815], *of Corfu. With Hints on Quarantine.* By A. White, M.D., Deputy Inspector-General of Military Hospitals, and late Superintendent of the Plague in Corfu, &c. London. 1846.

The last half century has seen, growing up and developing itself in Europe and America, a power which is destined, we firmly believe, to exert a more important influence on the prospects of the human race than even the heaven-born invention of printing itself—we allude to the means of easy and rapid communication between distant places by means of steam, electricity, &c., &c.

If we recollect aright, it is Guizot who, in his History of European Civilization, makes the very just and philosophic remark in reference to the Crusades, that whilst the whole of Europe rushed forth with mad zeal, and the most relentless ferocity, to engage in the first, just as they would have assembled precipitately to destroy a pack of wolves that threatened to devour them, the second Crusade was got up with greater difficulty, and had more of the character of an ordinary war, whilst the third had become softened down into a mere tournament for the display of their chivalric valour on the part of some, and a chance to acquire sudden wealth on the part of others; the fact being, that at first the Saracens were regarded and represented, not as men, but as monsters, and in proportion as these false notions were dissipated by experience, and by the narratives of those Crusaders who returned to their homes, the natural feelings of humanity began to have play, and it was found more difficult for interested parties to urge on the wholesale butchery. Something of the same kind has been taking place in Europe since the last continental war, and we hear no more of the phrase, that "the French are our natural enemies," since the employment by a noble peer in the House of Lords, a few years ago, of that demoniacal expression, was so universally condemned and reprobated by the country. Free and rapid communication must not merely eradicate national prejudices, which are always false, but must also lead very powerfully to create a fusion of habits, to spread the benefits of science, civilization, and religion, and perhaps also to remove one of the greatest of existing obstacles to the

increase of knowledge, viz., the necessity philosophers are under of spending a large portion of their lives to acquire a knowledge of several languages. Steam coaches and electric telegraphs, will, in ten years, do more to make men practically believe in that great maxim of Christian philanthropy, "God hath made of one blood all the nations to dwell on the face of the earth" (Acts, xvii. 26), than lecturers and essayists could effect in a century. If, however, the doctrines commonly entertained with respect to the transmission of the plague be really founded in fact,—if we must always lose at least six weeks in crossing the frontier of some countries,—unless that disease disappear entirely from the face of the earth, all the glorious achievements of human genius and industry that we have been alluding to, all our sanguine hopes of the future, must find their remotest limit, and a barrier which they can never hope to pass, on the shores of the Mediterranean or the Persian Gulf; and the tree of knowledge, so far at least as information respecting the cradle of ancient civilization is concerned, must still, as in the case of our first parents, bear a fruit redolent with disease and death.

To the Irish practitioner, who never intends leaving his native shores, it is in its bearings on the progress of civilization only that the subject of quarantines can at present offer the slightest interest; to him mere plague contagion, in its individuality, is not a matter in the least degree practical, since, comparatively, very few of the present generation have ever seen a foreign flag in an Irish port, and if matters remain as they are there is about as much probability of the introduction of plague by direct importation into Dublin or Cork, as of the inhabitants of Baffin's Bay or of Nova Zembla being decimated by the same disease. We have read, however, in our college days, that long ere either Normans or Danes, or Saxons, or Romans, had come to trouble the peace of these fertile isles, it could be said of Ireland then, as compared with Britain, "melius aditus portusque per commercia et negociatores cogniti" (*Tacit. Agric. c.* 24); and without attaching too much importance to our mediæval greatness and more recent prosperity, what has been once may be again, or history is but a useless blank and deceptive fable; and though our docks may now be empty, and our splendid Custom House, of which Liverpool, London, or New York might well be proud, may now be on the verge of following the fate of the Linen Hall, and many far nobler mansions, and becoming an hospital, a poor-house, or a barrack, we are ardent enough to indulge the fond hope and confident expectation that when the black

cloud which at present envelopes us begins to break up, a brighter destiny will be found to await us,—railways uniting together our opposite coasts, and those lakes, rivers, and natural harbours, which Providence has bestowed upon us with such lavish hand, being rendered accessible and available, Ireland may even in our own day cease to be a mere bank obstructing the entry of the Mersey, the Severn, and the Thames, and a foreign sail or a Greek crew(*a*) may cease to be a wonder in an Irish port. But we must return to our subject, from which we have been led away by our sanguine temperament and national enthusiasm.

Few, if any, discussions carried on in a strictly scientific body, have attracted such deep attention amongst all classes of thinking men, in all parts of the world, as that of which Dr. Milroy's pamphlet purposes to be a summary; for reasons above hinted at, however, we cannot afford enough of space for a complete exposition of the whole, since the Report and discussion make a large volume in themselves, and to analyze an analysis is an absurdity of which we do not intend to be guilty. The pamphlet before us is really what it purports to to be, a *summary* of M. Prus's Report, and were we to attempt to carry condensation farther, we should certainly realize the " brevis esse laboro obscurus fio" of the Roman critic. Such of our readers, therefore, as may wish to probe to the bottom this much agitated question of contagion and the plague, we refer to the pages of the *Comptes Rendus de l'Académie de Médécine de Paris*, to the French works quoted in the heading of this article, or to the translation of the Academy's Report, published by order of Parliament. To those, on the other hand, who have neither time nor inclination to wade through all the minute details of this truly *vexata questio*, we have great pleasure in recommending, in the strongest terms, the concise, lucid, correct, and, even to a non-professional reader, most interesting and instructive analysis with which Dr. Milroy has recently favoured the public. Without, therefore, entering into more than a cursory examination of the subjects treated of in the summary before us, we think it may not be uninteresting to most of our readers to throw together in this place a few observations in reference to the general question of sanatory restrictions on intercourse.

The type and first trace of quarantine laws is undoubtedly

(*a*) The arrival of a Greek vessel at Cork, bringing grain for our starving peasantry, excited so much wonder, that it was necessary to have a police force constantly in attendance to restrain the curiosity of the thousands who crowded to see the strangers.

to be found in the Levitical institutions of the Mosaic law, in respect to uncleanness(*a*). A suspected person was required to be inspected by the priest, who then, as well as in the middle ages, was physician both to mind and body. If the case were somewhat doubtful, the patient was kept in strict confinement until a positive opinion could be pronounced as to his disease. The period of latency seems to have been regarded as fourteen days at the maximum, after which time, if no evidence of disease were found, the patient was discharged from all imputation. If declared leprous, however, he was required to reside outside the camp, and even the sister of the lawgiver himself was thus separated from the rest. In latter times a "house of uncleanness" (Beth Chofschith), or a Lazaretto, as we should say, was instituted, in which even kings were occasionally confined (2 Kings, xv. 5). Similar sanatory regulations do not appear to have been enforced by any other nation of antiquity, pestilence being generally regarded as the special visitation of some offended deity—

"Pestis et ira Deum Stygiis sese extulit undis"—

who was to be appeased by the institution of new orders of priests and the building of new altars. The reason of the inscription, Ἀγνώστῳ Θεῷ, which called forth the eloquent address of the Apostle Paul, is too well known to most of our readers to require to be more particularly referred to as an instance in point; and we would only further remark that no Christian will be content to explain on mere *medical* grounds the numerous ceremonial observances and very complicated ritual of the Mosaic dispensation; in the class of ceremonial observances, however, we must range the enactments as to leprosy, &c.; and until scientific grounds for abstinence from the flesh of hares, deer, swine, &c., can be satisfactorily adduced, we must decline to admit the scriptural argument in support of contagion, and a protracted period of incubation of disease.

The modern notions of quarantine and contagion seem to have originated in Lombardy and Milan, and were most evidently based on the Levitical institutions. During the plague of 1374, the Visconte Bernardo compelled the people, under pain of confiscation of goods and death, to remove the sick from the city out into the open fields, to be there utterly abandoned to Providence(*b*). In 1383 it was forbidden, under

(*a*) Levit. xiii. xiv.; Numbers, v.; Deut. xxiv.
(*b*) *Muratori Scriptores Rerum Italic.* t. xvi. p. 560, and t. xviii. p. 82.

severe punishment, to suffer any infected person to enter the country; and in 1399 directions were given for the purification of the clothes and other effects of those who had the plague. These, however, were but temporary arrangements, originating in panic, and disused and forgotten the moment the progress of the disease was stayed. The city or state of Venice was undoubtedly the first to adopt regular and permanent arrangements to prevent the spread of pestilence, and the commencement of its present hygiénic system dates from a period when the Queen of the Adriatic was in the closest commercial relations with almost the whole of the then known world. An hospital for plague or leper patients exclusively was opened in 1403, and during the prevalence of a terrible visitation of plague in 1448, the health-office was instituted by a decree of the Senate, but the isolation of passengers and the depuration of goods did not begin to be practised until 1485. The system thus established at Venice gradually spread to the other Christian countries that border on the Mediterranean, and has been adopted to a greater or less extent all over the civilized world. The houses and enclosures in which passengers and goods suspected of contagion are confined, until a positive opinion can be pronounced respecting them, are called lazarettoes. This name is derived from St. Lazarus, who, in the Roman Calendar, is the patron of lepers; and as leprosy was a very common disease in Italy and other parts of Europe during the middle ages, the hospitals in which lepers were confined were called *lazarettoes;* the lepers themselves, *lazzari;* and all miserable and degraded individuals, *lazzaroni.* Persons or goods shut up in a lazaretto are said to be in quarantine, from *quaranta* (forty), because the period of confinement for those arriving from actually infected places is forty days. The older writers do not even pretend that this time was dictated by observation. Some persons *now* conjecture that it was adopted in order to include the last of the supposed critical days of the older authors; but there seems good reason to believe that, in accordance with the superstitious notions of the time, the quarantine was framed in imitation of our Saviour's sojourn in the wilderness, and because the people were accustomed to the forty days in Lent.

Bills of health are consular certificates of the sanatory condition of the place from which a vessel sails. They are said to be *clean* when the port is free from plague, and *foul* when the plague raged there at leaving. The oldest bill of health known is of the date 1527(*a*). The principal and best regulated

(*a*) *Zegata, Cronica di Verona Verona,* 4to. iii. p. 93.

lazarettoes at present existing are those of Venice, Leghorn, Marseilles, Trieste, Genoa, Messina, and Malta; but, in addition to these guards on maritime communication, there is a vast number of inland stations, where goods and passengers are most strictly examined, to prevent their carrying with them the seeds of pestilential disease.

The common doctrine of quarantine assumes:—1. That an individual may be labouring under a pestilential disease, although he may as yet present no symptom whatever of a deviation from health; and this latent period, or period of incubation, is supposed not to exceed, though often not to fall far short of forty days. 2. That animal bodies and various kinds of objects of merchandize may have attached to them a something possessed of the power of giving rise to pestilential disease in those who may be brought into contact with it. 3. It may also be placed among the postulata of lazarettoes, that Egypt, Turkey, and Syria, are the natural nidus of plague, where it is produced, and from which it is propagated to other countries. Southern Russia, Tunis, and Tripoli, are regarded only as suspected, from their intercourse with the former; and Algiers, since it became a French colony, has ceased even to be suspected, no quarantine being directed against it.

The following are some extracts from the printed regulations for the lazaretto at Marseilles, as revised, corrected, and approved by M. Duchâtel, Minister of Commerce, in 1835; which will serve to shew that the whole spirit and tenor of the quarantine laws, even in the best of the lazarettoes, was, within a very recent period, fully as little in accordance with the principles of civilization and Christian benevolence as the *aquatic test* of witchcraft, formerly in vogue in Great Britain. Article 111 lays down that,

"The physicians and surgeons shall not on any account enter the chamber of an ordinary patient in quarantine; they must be satisfied to learn his state by his replies, his appearance," &c. &c.

Article 115 adds:

"The physicians and surgeons shall not enter within the enclosure where a patient affected with a contagious disease is lodged; they must stop at more than twenty feet distance from the outer gate, so as to be *at least forty feet distant* from the patient they have come to visit, who shall shew himself to them *if his state permit!*"

Should the unfortunate patient be unable to come out thus to exhibit himself, he is to be prescribed for on hearsay (Articles 112 and 116). In all his visits the medical man is to be

accompanied by the captain of the lazaretto,' who is charged "to take care to search out, and carefully remove, all susceptible objects, even the most minute which may accidently be found in the neighbourhood of, or approaches to the enclosure."

The internal *régime* of the lazar-house is still more horrible.

"*Article* 613.—Wooden clogs, and oilcloth trousers and gloves, are to be procured for the person who attends to the patients, and these he is to make use of whenever he enters a patient's room to reach him a remedy *at the end of a plank*. He must put off his clothes and expose them to the air every time he leaves the sick room.

"*Article* 614.—Whenever the aid of a surgeon is required for the performance of an operation, a surgical pupil must be *invited* to shut himself up with the patient; *but this must never be done but at the last extremity.*

"*Article* 615.—When it is necessary to open a bubo, which is seated on a part of the body that the patient himself can reach, caustics are to be made use of, *and every possible means are to be tried* to get the patient to operate himself; but for urging him to operate, a moment is to be fixed on when he is sufficiently in possession of his senses to be able to do so, even though the bubo may not then have arrived at the degree of *maturity indicated by the rules of art.*

"*Article* 616.—Oilcloth garments, similar to those before alluded to (Art. 613), are to be procured for the surgical pupil; also instruments with very long handles, so that he may operate without touching the patient. He is to be supplied with very strong vinegar, the fumes of which he can respire, frequently washing himself likewise in the same fluid each time that he approaches a patient. Every time that he enters the chamber of a pest patient he is to carry with him a chafing-dish, on which he is to burn perfumes in sufficient quantity to produce a smoke capable of neutralizing the morbific influence of the pestilential miasmata."

Were it not for the limits within which the pressure of other articles compels us to confine ourselves, we should be inclined to give here a picture of other lazarettoes at an earlier date, from the pen of an eye-witness and sufferer; but we must be satisfied with the following sketch of an inland quarantine station. It is extracted from "Murray's Hand-book for Southern Germany," and we can vouch for its correctness, at least not long ago.

"Outside Orsova, by the water-side, and near the ferry over the Danube, stands the Parlatorium, a wooden shed in which the market (*skela*) is held three times a week. On account of the quarantine regulations, the inhabitants of Servia and Wallachia are prevented coming in contact with the subjects of Austria, and dare not cross the fron-

tier without an escort. The Austrian quarantine is five days for those who come out of Wallachia, and ten for those from Servia, increased to forty in time of plague. The Wallachians again have a quarantine of five days against the Servians; so that none of the three parties can intermix for the purpose of buying or selling, nor can they touch each other's goods. On this account the building where the market is held is divided by three partitions, breast high, behind which the dealers of the three nations are congregated. In an open space in the centre is a table, by the side of which the Austrian quarantine officers take their stand, aided and supported by a guard of soldiers with firearms and fixed bayonets, to enforce order and obedience. Whenever a bargain is made, the money to be paid is handed to one of the attendants, who receives it in a long ladle, transfers it to a basin of vinegar, and, after washing it, passes it on to the opposite side. The goods to be purchased are placed within sight, and are immersed in a tub of water or fumigated, when they happen to change owners. It is an amusing sight to see the process of bargaining thus carried on by three parties, at the distance of several yards from each other, attended by the vociferation and gesticulation inseparable from such business. When the bartering is transacted, the Wallachians are escorted back to their own territory, as they had previously been in coming to the spot, by a guard of soldiers, and the Servians re-cross the river in their boats."—*Southern Germany*, p. 457.

We remember to have met with, somewhere in France, a series of portraits of celebrated plague-doctors, whose grotesque equipments amused us not a little; but we really thought the genus was extinct, until we read the following description of the late Dr. Ladroni, physician to the present Pasha of Egypt:

"His harness was wholly of unsusceptible materials; his saddle was wholly covered with oilcloth, his stirrups were braided and his reins made with filaments of the date tree; he had a huge oilskin cloak in the shape of a sack, which rose above his head, and descended beneath his feet; he was always escorted by four servants, one before, one behind, and one at each side, so that no person could approach him."

In spite of these ridiculous precautions the enemy found its way to him: he died of the plague; while many of his brethren, who took no precaution whatever, escaped, and are living to this day.

The arrangements in reference to merchandize, though not so cruel, are, if possible, more absurd than those which apply to men. An arbitrary classification into *susceptible*, *doubtful*, and *non-susceptible* has come into general use, but we defy any one to adduce in its support a single argument derived either from reason or experience. Kitchen articles, hardware, delph, candles of all kinds, leather, and other animal tissues, are all

considered capable of communicating the plague; yet, under different names, the same articles are declared incapable of harbouring any contagion. Rough coral, ivory, drugs, spices, sugar and coffee, are regarded and treated as doubtful, but the various woods, resins, soda, and all salts, grains, dried fruits, and honey, are treated as perfectly harmless. Horses, in like manner, are not able to carry the contagion of plague, but cats are most active in doing so! Paper is also highly susceptible, and in consequence, all letters coming from the Levant are invariably opened in the lazarettoes, and do not always find their way on to their proper destination. Fumigation, exposure to the air, and in some cases fire are the means of disinfection employed, but no strict or invariable rule seems to direct the officers in their choice of the disinfectant. Such, however, are the absurd notions and panic fears still entertained in regard to the propagation of disease, that in Italy, within the last eight or ten years, bars of iron have been actually passed through the fire to destroy the contagion adhering to them; and vessels from Great Britain have been subjected to a quarantine at Messina, in consequence of a report in a French newspaper, that typhus fever prevailed in Glasgow; while a quarantine of forty-two days has been instituted in more than one country against the invasion of East India cholera; and a cargo of New Orleans cotton, that had been landed and re-shipped at Liverpool, has been declared at Copenhagen infected after another fortnight's voyage. While these and many such like things had been acted over and over again in different European ports during the last few years, it is nevertheless equally true that men of education everywhere have begun to feel the urgent necessity of putting an end to such absurdities. The most urgent and cruel absurdity, however, was undoubtedly the neglect to which the sick were exposed; and in reference to this important question, a truly noble example had been set long before by that great man, who, during the last war, presided over the destinies of France and of Europe. Napoleon and his gallant corps of savans were, indeed, the first reformers of the medical treatment of plague, and the mental greatness which they thereby displayed makes us but the more deeply regret that unhappy circumstances should have deprived the world of the benefits of their virtues and their talents, and caused them to be wholly prostituted to the service of the fiendish arts of destruction. They, however, set an example in regard to plague(*a*), which has at length been followed, and

(*a*) Desgenettes, Physician-General to the army of Egypt, even went so far as to inoculate himself with the matter of plague bubos. No bad result

bids fair to eventuate in as great a reform as the liberation of the English captain by the philanthropic Pinel, to which we have before alluded in this journal, in treating of a subject by no means so dissimilar as it may at first sight appear.

"Dr. Aubert-Roche was the first to display that brave and generous devotion to humanity and science which has since been followed by so many of his professional brethren, when he devoted himself to wait for thirty-six hours unceasingly, and without taking any precautions, upon his friend, Dr. Fourcade, who died of the plague at Cairo, on the 20th of February, 1835.

"Shortly afterwards, numerous plague patients were received into the hospital of Esbekie, at Cairo. Clot-Bey, anxious to give the most complete authenticity to the observations which might be made of these cases, proposed to MM. Gaetani, Lacheze, and Bulard, to join with him in forming a committee or board for the purpose of attending together upon all the patients in the successive stages of the disease, and of making *post mortem* examinations. These four gentlemen carried through this task with the greatest zeal and devotedness. The infected were waited upon like other patients; they were freely touched whenever there was occasion to do anything for their relief, or for the investigation of their symptoms. The bodies of those who died were taken to the dissecting amphitheatre, and every organ was most attentively inspected. The results of each visit in common were carefully reported in a register, and each report was regularly signed by all four. This register (which was submitted to the perusal of the government Commission), is the chief basis of the works which have been published by Clot-Bey and Bulard.

"Subsequently to these researches, the professors of the medical school at Abouzabel (about four leagues from Cairo) personally attended upon 140 plague patients, of whom thirty-eight died. Professor Perron has communicated a report of the observations and *post mortem* examinations then made, in a memoir which he addressed to the Academy.

"Drs. Aubert-Roche and Rigaud, attached to the great hospital at Alexandria, displayed no less courage and disinterestedness in their inquiries. The latter gentleman died of the plague, leaving behind him an account of sixty-eight dissections which he had made of fatal cases. The former has published an account of his observations, collected either by himself or in conjunction with his lamented colleague.

"The conduct of M. Lesseps, the French consul-general at Alexandria, has been the theme of universal admiration. By his own example he powerfully contributed to dissipate the exaggerated appre-

followed; and many of Desgenettes' countrymen have since practised on themselves similar inoculations, and with equal impunity. M Clot (Clot Bey) has inoculated himself with the plague matter repeatedly.

hensions of visiting and even touching plague patients. His conduct towards Dr. Rigaud, up to the last moment of his friend's life, was a memorable instance of noble generosity."—*Milroy*, p. 16.

This was indeed an advance. To face the dread destroyer, and, despite all the terrors which his very name inspired, to continue in his presence; calmly and unceasingly to lavish on plague patients, when abandoned by all the world beside, those many nameless attentions, which, though perhaps trifling, we know in such circumstances are so very highly prized, even when unavailing, was indeed to establish a far juster claim to immortal honours, than could be given by almost any of those actions for which titles are conferred and monuments erected. "That noble band of devoted Frenchmen," as Dr. Milroy calls them, are truly worthy of being held in honoured remembrance by all who can understand or appreciate the most enlightened zeal for the advancement of science, and the purest and most disinterested humanity towards their suffering fellow-creatures.

The narratives of Beechy, Franklin, and other arctic voyagers, abound in touching instances of northern bears and walrusses devoting themselves to destruction rather than abandon a wounded comrade; and we read such anecdotes with instinctive interest and approbation, for our consciences, not less than the principles of our holy religion, make us to despise and condemn all exhibitions of mere selfishness and cruelty; yet such is the overwhelming influence of a superstitious notion or a false theory, that for centuries, in the Levant, it has been the characteristic of a Christian to abandon in their extremity his dearest friends when attacked by the prevailing disease. The Mohammedan, on the other hand, strong in his confidence in the power of his Allah, and in the beneficent intentions of the favourite prophet, regarded with the most unmingled contempt such selfish and degrading apprehensions, and his stoical indifference led him into a precisely opposite error, and one almost as injurious. In fact here, as in the case of the treatment of lunatics, to which we have drawn attention in previous numbers of this Journal, a stolid ignorance of all the actual characteristics of the dreaded disease was the real cause of the enactment of those regulations, which, absurd in principle, and cruel and barbarous in practice, yet enforced by the heaviest penalties, and often even by the infliction of death itself, will, in another age, scarcely be believed to have ever had an existence. Happily, however, the medical profession has always afforded abundance of able and learned men, ready and eager to encounter every danger, and to endure every hardship, in the cause of humanity and of science; and the noble Frenchmen,

to whom we have above alluded, have not been without many generous rivals, British and foreign, in their career of research and discovery, with respect to the most terrific and most fatal of diseases, oriental plague.

Since 1835 the whole subject has been most minutely and carefully studied by the physicians of Egypt and the other countries visited by the plague, who have lost no opportunity of recording the symptoms and diligently investigating the anatomical characters of that disease. A vast number of essays and memoirs on plague have been sent into the French Academy; some works on it also have been published; and the result has been, that a considerable change has been taking place in the public mind with respect to its true nature and characters.

"In 1838 a proposal was made by the French to the British government to promote the formation of a general congress of delegates from the various European states having ports in the Mediterranean, for the purpose of agreeing upon some uniform system of quarantine regulations to be adopted by all. Our government at once acceded to the proposal. Austria also, which had been applied to by France at the same time, intimated at first her assent to its general principles and substance, only with some modifications in the details. Difficulties, however, were subsequently started; and the result was, most unfortunately, that the matter dropped entirely for the next four or five years.

"In the course of the same year (1838), and indeed anterior to the date of the proposal of the French Government, we find that Mr. Lewis, one of Her Majesty's commissioners for inquiring into the affairs of Malta, in a very able document respecting quarantine regulations in the Mediterranean, after expressly asserting that 'it is notorious that the mode or modes in which plague is communicated are very imperfectly known, and that some of the maxims, on which the most important quarantine regulations rest, are little better than gratuitous hypotheses,' suggested that two or more medical men should be sent out by the British Government to visit all those ports of the Levant where the plague most frequently exists, with the view of collecting ample and authentic information upon the mode or modes in which it is propagated or liable to be communicated. He suggested at the same time, that France and Austria should be invited to join with us in this inquiry.

"When Mr. Lewis's views were submitted by Government to Sir William Pym, our Superintendent-General of quarantine, for his opinion, he, with sound judgment, we think, proposed that, instead of sending out physicians from this country, 'copies of Mr. Lewis's queries should be forwarded to the different consuls at Constantinople, Smyrna, Aleppo, Alexandria, Cairo, and Odessa, to which might be added Marseilles and Malta, requesting them to submit them to the different

European physicians, and to obtain from them replies and observations, which might be forwarded to the quarantine congress expected to assemble in the course of the present year (1839)."—*Milroy*, pp. 12, 13.

These suggestions were at once acted upon, and the answers obtained, particularly from Clot-Bey, Dr. Grassi, and Dr. Laidlaw, contain a mass of most valuable and practical information. The events which led to the academic discussion are not exactly those detailed by Dr. Milroy, but they are worth alluding to. It appears that the inquiries set on foot by Mr. Lewis tended strongly to refute the idea of the plague being communicable by mere articles of merchandize; but it also fully established, what turned out to be practically of greater consequence, viz., that the existing quarantine laws were productive of very serious injury to British commerce. Now commercial nations always understand pecuniary losses much easier, and more quickly, than they can be got to comprehend scientific blunders, and in consequence the British government, whilst still, *in words*, strenuously maintaining the old doctrines of the contagionists, in 1841, practically decided against those doctrines by dating the commencement of quarantine, not from *arrival*, as had been hitherto universally maintained, and as is still the case in France, but from *departure* from the suspected port. This was in reality abolishing all quarantine whatsoever on vessels arriving in England with clean bills; and the commercial importance of the change being at once perceived by Prince Metternich, the Austrian government, though always hitherto opposed to any modification, or even investigation, of the quarantine laws, was induced by interest at once to follow, in this respect, the example of England. France then became the only great power that still adhered to the old rule, although the French government had been the first to propose an investigation as to its necessity, and was still anxious that the inquiry should be set on foot. In 1843, therefore, another attempt was made to bring about a general congress to settle the question, but Austria still stood aloof, urging as preliminaries evasive queries, which prejudged the whole matter. In the meantime the modifications in the quarantine laws, which had been so strangely adopted by England and Austria, had been found so ruinous to French commerce in the Mediterranean, that the attention of the French government was repeatedly called to the subject by various manifestations of popular feeling, and eventually by the Chamber of Deputies refusing, on two occasions, to grant the full sum of money demanded in the budget for the support of the lazarettoes. In fact, the mere difference as to quarantine rendered it now an actual economy of time, in returning

from Egypt to France, to sail first to England, and afterwards to cross the Channel, instead of going at once direct to Marseilles! At length, then, after a very staunch resistance, worthy of a better cause, the ministry referred the decision and investigation of the whole question of quarantine to the Royal Academy of Medicine.

"In August, 1844, the Royal Academy of Medicine in France appointed a commission to examine all the varied questions connected with the plague and with quarantines. This commission was composed of the following members,—men, we may remark, of the highest professional and scientific attainments,—MM. Adelon, Begin, Dubois, (d'Amiens), Dupuy, Ferrus, Londe, Melier, Pariset, Poiseuille, Prus, and Royer Collard. M. Ferrus was named the president, and M. Prus the secretary and reporter. The commissioners were engaged in their deliberation for upwards of twelve months, and had every facility granted them by the French government, to render their inquiry as complete and as accurate as possible. At length the Report was drawn up, and read at the sittings of the Academy, on the 5th, 10th, 17th, and 24th of March, and the 5th of May of the present year. It is certainly a very elaborate and instructive work, replete with most valuable facts and data, which cannot fail to be truly acceptable to every inquirer upon the great questions under consideration, whether he admits the soundness of the conclusions adopted by the majority of the commissioners or not"—*Milroy*, p. 15.

The Government gave the Academic Commission every possible facility of obtaining information, and placed at their disposal all published works and documents relating to the subject.

"Among these we may mention the original papers respecting all the cases of plague that have occurred in the lazaretto of Marseilles since 1720, along with a letter and memoir from Dr. Robert, one of the physicians of this lazaretto; the register kept in Egypt and Syria, during the years 1828, 1829, and 1830, by the Plague Commission, of which M. Pariset was the President; the report addressed in 1842 to the Minister of Commerce, by Dr. Delaporte, of his mission to Constantinople, Smyrna, and Alexandria, for the purpose of studying the plague in these places; a statistical statement of 506 epidemics of the plague, drawn up by Dr. Rossi of Cairo, who, like Dr. Delaporte, nearly fell a sacrifice to an attack of the pestilence; the statistic report of all the cases of plague observed in the lazaretto of Alexandria since 1835, by Dr. Grassi, who has been physician of that establishment since 1831; a memoir on the plague in Persia, by Dr. Lacheze; one on the plague in Algeria, from the year 1552 down to 1819, by M. Berbrugger, Corresponding Member of the Institute, and conservator of the library and museum of Algiers; a memoir on the contagiousness of the plague

by MM. Pezzoni, Leval, and Marchand, members of the council of health of the Ottoman empire, dated June, 1842; and lastly, a memoir on the antiquity and endemicity of the plague in the East, and especially in Egypt, by Dr. Daremberg, the learned librarian of the French Academy.

"In addition to these numerous sources of information, the Minister of Foreign Affairs granted to M. Prus the privilege of consulting the dispatches of the French ambassadors and consuls in the Levant on all topics connected with his inquiries. The dispatches of M. Lesseps (to whom we have already alluded), during the frightful epidemics of 1835 in Egypt, were found to be especially valuable. The Minister of Marine also put all the official documents under his control at the free disposal of the Commissioners.

"With the view of rendering their inquiry as complete and comprehensive as possible, the Commissioners invited to their meetings the attendance of medical men and others, who might feel inclined to give any verbal communication. In this way, they received much valuable and interesting matter."—*Milroy*, p. 18.

The following are the conclusions unanimously voted by the academy, on the 1st of December, 1846, as reported in the *Gazette Médicale* of the 8th.

I. *Locality where the Plague originates.*—In the present state of the people and of their civilization, the countries where the plague originates are—first, Egypt; next, Syria; and last the Turkish empire.

It is also to be apprehended that the plague may likewise develope itself without importation, in the regencies of Tripoli and Tunis, and in the Empire of Morocco; the same danger does not seem any longer to exist in respect to Algiers.

II. *Causes of the Plague.*—The conditions which give rise to and promote the development of plague appear to be the living on alluvial or marshy ground; a warm and moist atmosphere; low, badly ventilated, and over-crowded habitations; the accumulation of large quantities of animal and vegetable matters, in a state of decomposition; bad and insufficient food; great physical misery; habitual moral depression; neglect of public and private hygiéne.

III. *Transmissibility.*—The plague, when it occurs in a sporadic form, does not appear to be transmissible.

The plague, in its epidemic form, is transmissible both in the localities where it rages epidemically, and in other places.

IV. *Modes of Transmission.*—It is transmitted by miasmata emanating from the bodies of the sick; these miasmata disseminated in confined and badly ventilated places may create centres of infection.

There is no evidence of the transmissibility of plague by mere contact.

New observations are necessary to establish either that the plague is or is not transmissible by the clothes or other effects of plague patients.

[After a careful study of the facts adduced, their number and their nature, we only feel surprise that the Academy did not enunciate its complete disbelief in this mode of transmission.]

The experience of the various lazarettoes of Europe, proves that merchandize has not transmitted the plague.

V. *Period of Incubation of Plague.*—Away from epidemic influences, plague never manifests itself eight days after complete isolation from sources of infection.

VI. *Hygiénic Preventives of Plague.*—Enlightened and persevering attention to hygiénic laws, will, by removing the causes of plague, extirpate it from the localities it at present infests.

VII. *Legislative sanatory Precautions.*—Vessels sailing from suspected ports, to have always on board sworn and regularly appointed medical officers, who shall be empowered to enforce *during the voyage* a good system of ventilation.

Clean bills to be given at departure, if the locality be then free from *epidemic* plague. *Foul bills* to be given if the disease be either epidemic or on the point of becoming so.

The Commissioners' own recommendation, that vessels from Syria, Egypt, and Turkey, in which no disease had occurred during the voyage, should, if furnished with *clean bills*, undergo a quarantine of *ten* days, or if with *foul bills*, *fifteen* days, to date from *departure* if provided with a physician, and from *arrival* if without one, was regarded by the Academy as contradictory of their own decision as to the period of incubation; and after much discussion the fixing of the time was left to the government; but the Academy was unanimous in recommending—

That vessels with plague, or suspected cases on board, should be treated as if from a plague district, the quarantine dating from arrival.

That in all cases the quarantine be performed in the lazaretto, and never on board.

That patients in lazaretto be so disposed of as to secure ventilation and isolation.

That plague patients be treated exactly as ordinary patients.

That vessels which have had plague patients on board be

subjected to a rigorous quarantine, the nature and duration of which to be determined by the proper authorities.

That the means in use for the expurgation of merchandize are utterly without utility.

We cannot better conclude our notice of the subject of quarantine and the plague, than by giving an extract from a dispatch of Lord Palmerston, in reference to some vexatious precautionary measures about to be adopted in Constantinople. The document is dated February, 1839, and no doubt it but expresses the opinions of the very learned and eloquent member for Preston, whose able and persevering researches on oriental plague have been the chief cause of those modifications of the quarantine system which have so greatly facilitated our intercourse with the East. It proves at least that intelligent civilians(*a*) by disentangling their minds of the superstitions of science, and then bringing their common sense to bear upon this difficult question, were able, more than seven years ago, to arrive at pretty nearly the same conclusions as those to which the French Academy has recently brought us, by a more laboured argument and a more extensive induction.

"With reference to the proposed regulations, I have to instruct your Excellency to endeavour strongly to impress upon the Turkish Government that they would more effectually prevent the breaking out and spreading of the plague, by introducing cleanliness and ventilation in the city and suburbs of Constantinople, than by any such violent interference as is proposed with the domestic arrangements of families.

"It is quite certain that the plague is much aggravated, if it is not actually generated, by the want of cleanliness in streets, by the want of sufficient ventilation in houses, and by the want of proper drainage in places contiguous to habitations; and if the Turkish Government would, in the first instance, apply vigorous measures to correct those evils, they would strike at once at the cause of the disease; whereas the measures which they have now in comtemplation will only be productive of inconvenience and suffering to numerous individuals."

Dr. White's work came to hand at so late a period that the foregoing remarks had previously been sent to the printer, and we were compelled to trench on already appropriated space in order to insert any notice of it here. We have, however, read the volume with all the attention which the importance of the subject demanded, and, although it has not inclined us either to modify or add to what was already written, we shall now

(*a*) Dr. Bowring, to whom we allude, is an LL.D., not a member of the medical profession.

proceed to lay before our readers a brief analysis of its contents.

The work is divided into three parts, which treat of—1st, The nature and qualities of plague; 2nd, The origin and history of plague, its symptoms and prognosis; and 3rd, A narrative of the Plague of Lefchimo, its introduction and progress. There are, besides, in addition to the preface explaining the reasons for publication, an "Introductory Discourse," fifty-four pages long, chiefly on the danger of meddling with the quarantine laws; an appendix of cases, which occupy about forty pages: the whole forming a goodly volume of 342 closely-printed pages.

From the preface and other parts of the work (pp. 1, 55, 77, 83, &c.), we learn that the author had been thinking about printing his observations during more than three times the Horatian term of probation for literary productions, when the publication, by Mr. Tully, of a work on the same subject, with the complete suppression of any mention of Dr. White, who, it appears, was Mr. Tully's superior officer, caused the thirty years' reflection to fructify into the volume before us. Dr. White certainly seems to have been badly treated by his subaltern; but the latter having, as it appears, been degraded to make room for him, his being so is, we fear, but too much in accordance with the working of human nature, to excite any surprise, and, however this may be, neither any personal feelings of wounded vanity, nor the want of fulness of another's narrative, seem to us very adequate reasons for the inflicting on the public a large octavo volume, if the contents of that volume were previously unworthy of publication. All the value of a work like that before us, is derived from its being submitted to the public whilst the events which it relates are still recent and fresh in the recollections of many uninterested persons, so as to admit of difficulties being cleared up by comparison with other testimony. We value hospital reports, because they are tacitly attested by many independent witnesses; and it is only a reputation, already thoroughly established, that can venture to draw much from the private practice of itself alone. But when we have to deal with the progress and characteristics of a disease, the very name of which inspires horror, and the approach of which paralyses the faculties and enthrals the reasoning powers,—when, moreover, that dreaded malady rages amongst a people situated at a great distance from us, more than ordinarily ignorant and superstitious, and credulous and prejudiced, in an equally high degree,—we cannot help stating our own conviction that,

whatever may be the character of the author, either for talent or veracity, to make his work in any way useful he should not have allowed an entire generation to pass away before he submitted to his professional brethren his conclusions from what he saw, still less from (which makes up the chief part of the book before us) what he heard.

We shall not attempt following Dr. White through all his chapters, but, as far as our space permits, simply analyze his ideas or his book *en masse*, as at once the shortest and most profitable course to be pursued.

The author having been formerly a contagionist by profession as head of the Board of Quarantine, still retains all his *esprit du corps*, and is the very impersonation of the quarantine system, such as it was. Plague is neither epidemic nor endemic, nor is it in the least degree communicable by the atmosphere, unless within the distance of three feet of the affected person or thing (p. 68); actual touch or the proximity we have spoken of being absolutely essential (pp. 15, 39, &c.) We may even walk in amongst, and examine at our leisure, hundreds of the dead and dying without incurring the slightest danger, if we but abstain from actual contact with susceptible objects (p. 18). Notwithstanding this, however, and although the author maintains that plague may be altogether got rid of and extirpated by proper measures, he yet believes that its "fomes" is not "rendered inert by the lapse of any length of time" (pp. 121, 133, &c.); nay, that if it has been shut up in a box, a tomb, or a mummy case, of the days of Pharoah Amenophis, it "ferments," and "acquires additional strength and activity by being confined" (p. 101).

Considering the very extreme views entertained by Dr. White in regard to the transmissibility of the plague, it is important to recollect that *he does not believe that the latent period, or period of incubation, of that disease ever exceeds one week.* (p. 27).

The Corfu sanatory code is dwelt on at great length by Dr. White. It appears to have been, if possible, more stringent and barbarous than even the lazaretto regulations before referred to. The sick, and the various grades of suspected persons, were *instantly*, regardless of the danger of removal, or of the tears and prayers of relations and friends, conveyed to classified, isolated camps, strictly guarded, where, under the immediate care of felon attendants, they were, if able to get up, and go to their tent-door, gratified by the distant view of their physician, making his daily rounds, with all the precautions against the possibility of contact with a susceptible substance

which the most active ingenuity could devise The healthy were compelled to remain within doors, each family apart, until famine was impending, and the disease had subsided, when the effects of those who had either suffered from plague, or had concealed property to avoid its destruction, were dragged with iron hooks from the different government stores in which they had been laid up during the plague, and were consumed in one vast bonfire, after which the inhabitants were allowed to cultivate their lands and to mingle together as formerly.

In the case of ships Dr. White is "of opinion, that, generally speaking, it will be the best, and perhaps the cheapest way in the end, *to destroy the ship and cargo at once*, and place the people under strict quarantine," &c. (p. 126).

What a blessing that the quarantine system is at last found out to be as absurd as useless, or we might yet see a gang of felon expurgators, under another Mazzenti, plunging "into cauldrons or tubs of water, either with or without soap," fumigating, cutting up, &c., &c., the contents of the Bibliotheque du Roi, of the Louvre, or of the British Museum, and burning in the most "satisfactory" manner such of them as "could be bought!" But no, the horrors of a quarantine board are only fully known in what are called "*protected*" places, where a military chief, with his foreign bayonets, can lord it as he will over the people submitted to his authority; and in the more civilized parts of Europe no government dare, even if willing, attempt to destroy the property and control the persons of its subjects in the manner proposed by Dr. White, and which, it would appear, was, even at the risk of rebellion, carried out under his orders in the island of Corfu.

Before concluding, we shall say a few words on some of the disputed points in the history of plague, as illustrated by Dr. White's experience.

Origin.—First, then, as to the origin of the plague: this question has been very carefully examined(*a*), among others, by M. Pariset(*b*); but it is more fully and, we believe, more correctly investigated by M. Aubert(*c*), who shews that plague was never endemic in Egypt during the period from 1491 before Christ, till 203 of our era (when Egypt was in prosperity and in the highest state of civilization); but that it became so when the decadence of its civilization caused hygiénic measures to

(*a*) Labat. *Annales de Médécine Physiologique*, t. xxv.; Burdin, *Journal de Gén. Médicine*, No. ii. June, 1830; Clot Bey, *de la Peste observée en Egypte*, &c. Paris, 1840; Aubert, Rachéze, Savaresi, Littré, &c., &c.

(*b*) *Mém. sur les Causes de la Peste in Annales d'Hygiéne publique*, t. v. 1831.

(*c*) *De la Prophylaxie Generale de la Peste.* Paris, 1834.

be neglected or disused, and when the moral and physical misery of the inhabitants was daily on the increase. About 356, embalming was completely put a stop to, the dead were buried in the churches, the squares, and the private houses, and generally but a few inches beneath the surface, whilst Egypt had become remarkable for the filthiness of its inhabitants. In 542, a pestilence, originating in Egypt, and one of the most terrible in history, ravaged the whole world; and the same country has ever since been a nidus for plague.

Greece, in like manner, was utterly unacquainted with the plague, until, being conquered and devastated by the all-destroying votaries of the Prophet, barbarism and plague became simultaneously rooted in its soil.

During the intestine wars which devastated Italy for some centuries after the building of Rome, fatal epidemics were of so frequent occurrence that at least ten are recorded to have happened between 500 and 400 B. C. Intercourse with Greece, however, afterwards diffused the blessings of civilization, and there was but one epidemic during the last century that the republic existed; but when the incursions of the barbarians of the middle ages threw it back to its former state of ignorance and degradation, epidemic diseases were as rife as ever.

Epidemicity.—The characteristic features of epidemics are thus given by Dr. Milroy in his Summary :—

"The characteristic features of epidemic diseases are these :— 1. They generally manifest in their progress three distinct periods, of commencement, persistence or status, and decline. These periods often display neither the same symptoms, the same lesions, nor the same gravity. 2. During the prevalence of an epidemic, other diseases are less numerous than usual, and they receive the stamp or impression of the prevailing affection. 3. When an epidemic disease prevails, even those persons who retain their health generally feel its morbid influence more or less. 4. Epidemic diseases not unfrequently return and cease at the same season of the year; and they have usually about the same duration. 5. An epidemic disease is often preceded by other affections, more or less severe, and more or less widely diffused; these seem to be in some way its precursors."

Now these are exactly the characteristics of the disease described by Dr. White, pp. 103, 104, *et multis locis.* We would add that plague, like other epidemics, spares some places in its course, and does not visit even adjacent and freely communicating villages or towns with the same severity(*a*); a

(*a*) Clot Bey, p. 299–309. *Cholet Mem. Sur la Peste*, Paris, 1836.

remark the truth of which is also very fully borne out by Dr. White: but we must pass to the only other point which we intend at present alluding to, viz.:

Contagion, and that only to shew that all the complex and cruel measures which a belief in it as the sole and orthodox channel for the conveyance of plague caused to be rigorously carried out in Corfu, were, in all human probability, unattended by the slightest benefit. Nothing can be more dreadful than the picture drawn by Dr. White of the state of Corfu during the winter of 1815. Whilst the plague was carrying off its victims after a few hours' illness, the inhabitants were kept confined in their houses and supported only by the food placed at their doors by felon gangs, who had authority to pry into every habitation, and whose ill-deeds it is impossible to complain of, since patrols of military by summary or even capital punishment compelled the strict observance of the quarantine. In the towns and villages the grave-like silence of the streets was broken only by the measured tread of the sentinel, the hoarse laugh and ribald jests of the savage and reckless *guardiano*, or the piercing cries of human suffering attendant on the spread of the pestilence. The country was equally silent and desolate, whilst, though famine and want was at every door, the land lay untilled and utterly waste, lest the husbandmen of different villages might possibly mingle together in the labours of the field, and thereby infringe those quarantine laws, the majesty and unbridled sway of which was attested by the numerous abandoned dwellings marked with the ominous black or yellow cross, which alternated with smouldering and still smoking ruins, in which half-burned and mangled corpses lay heedlessly mingled with the remnants of their ruined wealth! How painful to reflect that, notwithstanding all these Rhadamanthine laws, the course and duration of the plague in Corfu was exactly that of the same disease when it occurs in Egypt, and is left to take its natural course. All modern authorities, and Clot Bey (p. 227) among the rest, inform us that the outbreak of plague is generally preceded by severe intermittent fevers, that misery and mal-hygiéne are its cause, and that it follows a most irregular course, sparing some and decimating other adjacent localities. Dr. White thus describes the district of Corfu, in which alone the plague appeared:

"Part is cultivated as vineyards and corn-fields, but by far the greater portion is in a wild state. It is much intersected with rivulets, which in summer are often quite dry. The roads are extremely bad, and indeed they scarcely deserve the name. In winter, when the ground is soft and boggy, they are almost impassable. Over this extensive tract

of country, twenty-seven villages or towns, besides a considerable number of detached houses, are scattered. Of these towns or villages, fourteen had been attacked by the plague, and although measures had been taken for extirpating the malady before my arrival, it could not be known, *from the desultory manner in which the plague had started up in several places* some short time before, how far the disorder might be considered as suppressed in other places.

"*To the close, swampy situation of the district must be attributed the frequent appearance of an autumnal remittent fever of a bad type; and it is probably owing to this, that when the plague first broke out it was considered to be only a return of the epidemic.*"—p. 155.

This is the shortest passage we could light on, but it is enough for our present purpose, and we pass on to the remark which has been made by all writers on the Egyptian disease, as seen in Egypt, and uncontrolled either by treatment or *quarantine laws*, viz., that at first it is most rapidly fatal, killing almost all whom it attacks, and that the epidemic commences in November and ends about the beginning of June. These *natural traits* are expressly mentioned as having been observed at Lefchimo (pp. 103, 148): the plague was first notified to the government on the 18th of December, after it had been raging for some weeks, and the last case of it occurred on the 3rd of June (p. 248), free pratique not being allowed even "to the district within itself," until the 15th of the same month. Now when we take these facts in connexion with Dr. White's own admission (p. 12), that "it is true that the plan of operations which was here adopted was not carried into full effect *until after the violent ebullition of the disease was over*, and consequently until after the principal mortality had taken place, which was before we arrived," we think that we have shewn good reason why we fully agree with the inhabitants of Corfu, in regarding the quarantine regulations to which they had been subjected as, in many respects, but another calamity, almost worse than the disease they were intended to counteract, and also fully justified Dr. Assalni when he says, "If I were doomed to be attacked by the plague, I would by far prefer being in the hands of the Turks to being amongst the Christians," a remark which has been made by many an oriental traveller from bitter experience of the contrast.

Medical Report of the House of Recovery and Fever Hospital, Cork-street, Dublin, from the 1st January, 1844, *to 31st December,* 1845. By GEORGE A. KENNEDY, M.D., M.R.I.A. late President of the College of Physicians, &c., &c.

ALTHOUGH, in conformity with the standing rule of the Cork-street Fever Hospital, annual Reports have been published by the physicians of that establishment, yet we have not thought it necessary to notice these documents frequently. They have added but little to our knowledge of fever in general; they have been, too often, but meagre statements of the experience of their respective authors of the past year; and have been sadly deficient in everything connected with pathological and anatomical details. We say it with regret, they have not been worthy of the great institution from which they have emanated.

But the blame is much more to be attributed to the government of the Hospital than to its medical officers. Narrow and unenlightened views have too long prevailed in the Cork-street Fever Hospital. It has never been made an hospital for instruction, and thus one of the greatest means of extending its usefulness has been neglected, and its officers deprived of the strongest stimulus to exertion. Anatomical investigations were, for many years, prohibited; and, when we reflect on the number of medical officers, and that the authors of the Reports had never the general management of the whole institution, it is not difficult to understand how so little of what is valuable has been embodied in the Reports of the House of Recovery.

But there are some honourable exceptions to the general charge of deficiency, and we would specify the Reports by Drs. Barker, O'Brien, Corrigan, and Kennedy, all of which, considering the difficulties under which their authors laboured, are full of important information.

We have had occasion, in our former series, to speak in terms of high commendation of the Report of Dr. Kennedy, and in the work now before us the author has justly sustained the reputation he so deservedly enjoys, of an accomplished, practical, and zealous physician, and of an accurate and most trustworthy observer.

We are glad to observe that Dr. Kennedy has alluded to the important subject of the duration of each patient's stay in the hospital. We gather from the Report that this period has been extended during latter years. The average number of

days in hospital, for each patient, was twenty-two in 1844. In 1845 it was nearly twenty-three and a half. Both these averages, however, are admitted to be greater than in former years, owing to the increased accommodation, which has induced the physicians to retain the patients longer than usual. Indeed, the medical officers admit, with regret, that in former years this advantage could not be secured to them, the epidemics being so severe, and the number of external applications so great and urgent, that, in order to make room, the patients were frequently removed before their strength was sufficiently established.

We receive this announcement with the greatest pleasure, and we trust the circumstances alluded to in the Report of the physicians will never again be permitted to occur. When the tendency to relapse is considered, to say nothing of the frequency of local disease after fever, and the number of anomalous cases which must be admitted into every fever hospital under the semblance of fever, it becomes plain that, when the average stay of each patient in the hospital is much less than three weeks, we must doubt, not only its utility as a sanatory institution, but the value of its reports of mortality.

Our limits will not allow us to follow the learned author in his truly valuable remarks on the exciting causes of fever, on rheumatic disease, and on small-pox, all of which are highly worthy of careful study.

The author concludes his Report with a well-merited eulogium on his friend and colleague, Dr. John O'Brien, who died towards the close of 1845, and of whom we gave a short biographical notice in our first Number(*a*).

Dr. Kennedy, having enumerated the various public services and writings of his friend, concludes by remarking, that notwithstanding he never acquired any great extent of private practice.

"This was probably owing in part to his feeble state of health, but still more to the circumstance, that, notwithstanding his extensive learning and experience, and his success as a practitioner, he was extremely modest and diffident, constitutionally reserved and retiring, almost to shyness. He wanted, in fact, that quality, so useful to the medical man in the competition for public favour, *boldness*. And yet, to use the words of Lord Bacon, 'boldness is a child of ignorance and baseness, far inferior to other parts.' It is the charm of the mountebank."

We would, in all good-humour, suggest to our excellent

(*a*) Preface, p. xxxviii.

author, that success in medicine, as in any other profession, depends on many circumstances, and variously combined qualities; and we know that he will be the last man to maintain, that the boldness of the great physicians of the past and present time was and is the offspring of ignorance and baseness; and there is no one who could better appreciate that boldness which springs from knowledge and virtue, than the esteemed author of this Report. The boldness of ignorance is, indeed, the charm of the mountebank; the boldness of knowledge is the mark of the the leader, and the hero. Our author has quoted Lord Bacon; the memory of his and our valued friend will not suffer by our giving another extract from the same authority:

"But, above all, in this helping and righting a man's self in his own carriage, he must take heed to shew not himself dismantled and exposed to scorn and injury, by too much dulceness, goodness, and facility of nature, but shew some sparkles of liberty, spirit, and edge: which kind of fortified carriage, with a ready rescuing of a man's self from scorn, is sometimes of necessity imposed upon men, by somewhat in their person or fortune, but it ever succeedeth with good felicity."

Lectures and Observations on Clinical Surgery. By ANDREW ELLIS, Fellow of the Royal College of Surgeons in Ireland, Surgeon to Jervis-street Hospital, &c. Dublin, Fannin and Co. 1846. pp. 275.

WE are pleased to see a work like the present coming from one of our hospital surgeons. The volume consists of a series of clinical lectures, eleven in number, delivered by the author, from time to time, in Jervis-street Hospital, and includes a particular detail of such cases in surgery as gave rise to these observations. The first lecture is devoted to the subject of medical education; the second to wounds of arteries and their effects. In this latter there are five cases given of suicidal wounds of the throat, in one of which the common carotid artery was successfully tied. In his concluding observations upon these cases, the author particularizes four ways in which death may be produced from a wound inflicted between the os hyoides and upper margin of the thyroid cartilage, viz.: hæmorrhage, suffocation, inanition, and laryngitis. In reference to the last he observes,

"Although the patient may have passed through the immediate

dangers resulting from such a wound as I have described, yet he may ultimately sink from *laryngitis* and imperfect nutrition, *aided by that morbid state of mind* which induced him to seek repose in death."

We entirely agree with the observation as to the effects produced upon the wound by the state of mind under which these unfortunate individuals labour. We have seen instances of this description where there was not the slightest tendency in the wound to heal, and where no other cause could be assigned for this circumstance, except the one to which the author alludes.

The third lecture treats of "traumatic aneurisms and their varieties" occurring at the bend of the elbow. This important subject has been treated of with that degree of full consideration to which it is so deservedly entitled.

We quite accord with the views expressed in the following extract:

"It a well established rule in surgery that we should never operate in a case of this kind (arterio-venous, or varicose aneurism), unless when compelled to do so by urgent circumstances."

Judging from the literature of this subject, the operation should be undertaken with the utmost caution and circumspection, inasmuch as the records of surgery furnish but few cases in which it was not followed by untoward consequences. The author, however, instances a case of this kind of aneurism, which was treated in the Meath Hospital, under Mr. Hewson, by ligature upon the brachial artery, aided by compression, so as to impede the return of the venous blood; the result was in this instance favourable, for the patient left the hospital in five or six weeks, perfectly cured. In speaking of the treatment of aneurismal varix he observes:

"The surgeon should never interfere beyond recommending the patient to wear a bandage constantly on the limb, to prevent over-distension of the veins."—pp. 72, &c.

Lectures IV., V., and VI., treat of "Injuries of the Head and their Varieties." To this subject the author has paid much attention, and, in his lectures, has inculcated sound practical precepts for the treatment of such accidents. The various injuries of the scalp, and their frequent consequences, are introduced to the reader's attention. Erysipelas of the head and face; the subjects of concussion and compression of the brain; inflammation of this organ and its membranous envelopes; fractures of the cranium and their results, together

with the operation of trephining, and certain general precepts which the author lays down for the guidance of the practitioner in performing this operation, are all carefully brought under the reader's observation. The sixth lecture concludes with remarks on hernia cerebri, together with cases and observations illustrative of the preceding observations.

In the seventh lecture, peritonitis, and those diseases with which it may be confounded, are considered; wounds of the abdomen and their varieties are also dwelt upon, and, together with "extravasations," they form the subject of the eighth lecture. In Lecture IX., delirium tremens, its symptoms, pathology, and causes, together with those affections with which this disease may be confounded, are fully and ably disposed of. "Catalepsy and ecstacy" are considered in the tenth lecture, and hydrophobia forms the subject of the last. After the author has considered the symptoms of this affection, and the other diseases with which it might be confounded, and the treatment proper in these cases, he concludes by making certain "supplementary observations, supported by cases, tending to prove that a tame or healthy dog may produce hydrophobia in the human subject." We will not now dispute this point with the author. He is as much entitled to his opinion as we are to our own; and, though we cannot agree with him in the conclusion he has arrived at, we feel happy that our difference of opinion arises upon a speculative, rather than on a practical subject.

In forming his opinion upon this subject, the author has, no doubt, been influenced by a benevolent anxiety to prevent the unnecessary risks which many individuals too frequently incur, in their treatment, particularly of the smaller species of the canine tribe; or, it may be, he has been forcibly impelled by the purely philanthropic desire of controlling that lavish expenditure of female affection, which, in his estimation, might be bestowed upon much more suitable and more deserving objects. Mr. Ellis is at perfect liberty to form his own conclusions upon this subject, and, if he has here erred, it is upon the side of caution.

Upon the whole, we consider the volume before us one of a truly practical character, and tending to impress upon the mind of the student the vast importance of studying surgery at the bed-side of the patient: it contains much of what will be found truly valuable in practice, and suitable both for the practitioner and the student.

Clinical Collections and Observations on Surgery, made during an Attendance on the Surgical Practice of St. Bartholomew's Hospital. By W. P. Ormerod, F.R.C.S.E., late House Surgeon at St. Bartholemew's Hospital. 8vo. pp. 312.

The practical tendency of the present age could not be better proved than by the favourable reception which such works as the above receive from the profession. Opinions now (we fear to mention such a word as theory), to be valuable must be drawn from many facts; nor is this enough, the facts themselves must be submitted to the inspection of the reader. This is as it should be, and can alone secure to medicine a place amongst the exact sciences, and enable her to hold a steady and triumphant course above the fanciful and fashionable theories of the day. Mr. Ormerod presents us with selections from the labours of nine years in the wards of one of the largest hospitals in London, and one of the noblest institutions in the country. He has, with a good deal of judgment, grouped together a number of cases of the same class of diseases, so as to arrive at positive conclusions, in some of the most interesting subjects in surgery, and to exhibit the treatment adopted in them at Bartholemew's Hospital. Thus, among many other topics, he lays before the reader what he has observed in injuries of the head and spine, of the nature and treatment of bursal tumours, of certain circumstances influencing the convalescence of patients after operations and injuries, abscesses in the abdomen, &c. But Mr. Ormerod has something more than the humble merit of an industrious collector of cases, or of a detailer of the treatment of others; his own observations and reasonings exhibit a well-stored mind, and one conversant with disease. So many quotations from his work, and so much of its substance, have been already brought forward in the weekly and other medical journals, that we are rather at a loss what quotation would best convey an idea of the author's style and matter, without following too much in the beaten track. Perhaps we shall pursue the safest course in considering, *seriatim*, some of Mr. Ormerod's statements on the nature and symptoms of syphilis, and the treatment by iodine and mercury; and, to make the subject complete in itself, we shall select chapters XV. and XVI., on primary venereal ulcers and their treatment.

"Primary ulcers," he says, "are divisible into three principal classes:

"1.—Excoriations and simple ulcers, unattended by any peculiar characters.

"2.—Ulcers, accompanied by more or less defined surrounding induration.

"3.—Ulcers spreading rapidly, and attended with rapid destruction of parts, including both that form in which the ulcerative process is most marked, as well as that in which the parts are removed by a more or less complete sloughing process, constituting the two forms of phagedænic ulceration, and sloughing phagedenæ respectively."

After describing the various parts of the male and female genitals on which the first class, "excoriations and simple ulcers," are most commonly situated, he thus describes the simple ulcer:

"The general appearance of these sores is that of an ulcer, with an uneven, spongy surface, of a brownish colour, surrounded by a sharp edge, and unaccompanied by any marked degree of hardness."

This is surely a bad description of the simple venereal ulcer. Would this description lead us to recognise the ulcer we are daily in the habit of seeing? Our experience would lead us to say, that in the first stage the venereal ulcer, when seated on a tolerably even surface, as about the corona glandis, for instance, is an ulcer of a round or oval form, usually slightly cupped, with a greyish yellow exudation adhering to the surface, a well-marked edge, and a red areola. In the second stage, the yellowish exudation has been thrown off, and the surface is red and granular. The matter of this sore, by inoculation, produces an ulcer of similar character and appearance, except that when this is done in the usual place (the skin of the thigh), there is a somewhat elevated hard base, and the ulcer is more cupped. Ricord, we believe, considers the simple venereal ulcer only inoculable in the first stage; and that when its surface is covered with granulations, the pus secreted has not that power. This is contrary to what we have observed, as, in a case of sores round the orifice of the prepuce of six months' standing, and quite granular, a specific ulcer was produced on the thigh by inoculation.

We quite agree with Mr. Ormerod,

"That under the employment of simple medicines, and also by doing nothing at all, many of these sores heal well and completely; but such is by no means the invariable rule; and so frequently do superficial sores, carefully treated or entirely neglected, last for an unusually long time, as compared with the period required for their cure under careful treatment, that some direct treatment is often beneficial, and sometimes absolutely necessary."

He next puts the very important question, whether the

employment of mercury is preferable to a simple non-mercurial, but regular, mode of treatment? Practical surgeons are now pretty generally agreed that the simple venereal ulcer may be very properly treated without mercury, but the chance of secondary symptoms is certainly increased by such a plan of treatment; and we may mention that we have seen as decided poisoning of the system, and consequently as severe constitutional symptoms, from the simple ulcer, as from any form of primary sore: and we always feel it our duty to explain this to the patient, who more than once has requested us to put him under a mercurial course, to prevent, if possible, the miserable consequences of constitutional infection. Whether it is decided to use mercury or not, the sooner the sore is healed the better. It is an inconvenience in itself; the discharge flowing on other parts may produce chancres on them. As long as it exists, we cannot be certain what minute it may take on a phagedænic or sloughing character; and it is probable that the continuance of an open sore is more likely to be followed by bubo. The best way of accomplishing the speedy healing is by destroying the surface of the sore with lunar caustic, or a saturated solution of the nitrate of copper. As soon as the slough formed by these separates, it usually leaves a healthy surface, which heals rapidly under the application of black wash, sulphate of zinc lotion, or even dry lint. But local treatment will fail, and patients repeatedly present themselves with chancres which have been, in vain, treated locally. Under a mild mercurial course, their cure is rapid. Mr. Ormerod says:

"The employment of mercury in this mild manner, namely, the local application of the black wash, and the administration of blue pill, once or twice a day, and continued for some time, is generally sufficient for the mere healing of the sore. There are, however, a class of cases which require a more decided plan of treatment, which, though not regular indurated sores, are benefited by the treatment required for that form of disease. These cases are not very numerous, but occur from time to time, the indication for the employment of mercury not being clear from any peculiar appearance of the sore, but the propriety of such treatment being suggested by the slow progress and continuance of the unhealthy appearance of the part under other plans of treatment."

He next considers the indurated chancre, which, he thinks, "is far from being rare." It may be solitary, or exist at the same time with simple sores. They present themselves in two forms: either open indurated chancres in the spreading stage, or as hard cicatrices. Taking both these forms together, Mr.

Ormerod is right that they are not rare; but we think that the first form, the Hunterian chancre, as it has been called, is rare. Mr. Ormerod's description of this sore is not more felicitous than that of the simple venereal ulcer. For example:

"Primary indurated ulcers are often, but not necessarily, single; the accompanying pain is not generally severe, and the surrounding inflammation is but slight. The ulcer is more or less round, seated on and surrounded by a bed of hard lymph, which terminates at its circumference by a more or less abrupt step into the surrounding tissues; the edges of the sore are sharp, whilst the surface of the sore may be pale, or brown, or spotted with blood, or it may present a whitish, pasty appearance, with shades of a brownish or green tint."

No mention is made whether the sore is cupped or not. What a confusion in "pale, or brown, or spotted, or whitish and pasty, or green!" The hard cicatrix may be observed after the sore has been healed recently, or for some months.

"There are certain appearances dependent on the tissue, in which the induration is seated; thus, on the skin, about the perinæum, we find a firm, hard mass, including the skin and subjacent cellular tissue; on those parts where the skin is thinner, the induration is generally more flat and broad; whilst under the thin covering of the prepuce and nymphæ, the mass of lymph forms a round tubercle, like a flattened pea or bean, which, when the membrane is rolled over between the finger and thumb, shews its white colour through the tightened surface of the thin adherent skin or mucous membrane."

He truly comments on the tedious course of the indurated chancre and cicatrix, unless treated by mercury, and on the liability of the latter breaking out at any time, and becoming again a venereal ulcer; but he omits to mention the following fact, which we have frequently observed, viz., that a sore near the corona, for instance, will heal, leaving a hard cicatrix of moderate size behind; this, about the period when secondary symptoms usually appear, becomes much larger, forming a hard, transverse, white, raised ridge, and at the same time the sore throat, eruption, &c., break forth; it becomes ulcerated, either like an excoriation on the summit, or an undermined ulcer under the upper part of the cicatrix. He agrees with the majority of writers, that mercury is the best treatment for the indurated chancre, both to effect its speedy healing, and also the more important object of preventing constitutional infection, more likely to follow from this sort of sore than any other. At Bartholomew's they use mercury both locally and generally,—the former in the shape of black wash and yellow

wash, in preference to mercurial ointment. We are far from agreeing in the following recommendation:

"When much surrounding inflammation exists, and the sore is surrounded by a considerable portion of inflamed skin, the general condition of the patient, as well as the condition of the part, indicate the propriety of the employment of *local bleeding by leeches*, or the other means commonly applied to an inflamed part, before the employment of local mercurial application."

Now, what will be the effect of the application of the leeches? Simply that the matter from the sore, getting into the leech-bites, will turn them into chancres, four or five of which you will have instead of one. No;—purging, cold lotions, rest, proper diet, but, above all, the internal administration of mercury, will be the best means of lessening the inflammation and healing the sore. After the mouth has been affected by the mercury, the mercurialization should be kept up till the hard cicatrix softens away, assistance being given by local friction of mercurial ointment. When sores occur round the orifice of the prepuce, they are attended with considerable induration of the part contracting the orifice, and, by destroying its elasticity, producing, for a time, phymosis. This hardness lasts for a long time after the sores have healed, but it is not a case where the rule just laid down by Mr. Ormerod should be observed, viz., of making the duration of the hardness the test for the time of continuing the mercury. Mr. Hunter described these sores round the orifice of the urethra, and their effect, from the structure of the part, of causing induration in it. The same observation has been made by many authors since, as well as the difficulty met in healing them. This they have in common with all sores round orifices liable to distension and contraction, and mere mercurialization alone will not cure them without very careful local treatment. We find our space will not permit us to comment on the author's observations on phagedænic and sloughing chancres, though many of them are valuable. We may only say that Mr. Lawrence has long been in the habit of administering mercury in phagedænic sores, and with the best effects. Hydriodate of potash has been tried in primary sores, but Mr. Ormerod says,

"The effect, in fact, seemed to be none—it did neither good nor harm; but by its use it prevented other medicines being employed."

Chronic phagedænic ulcers, however, must be excepted; in these, much benefit has been derived from hydriodate of potash, with sarsaparilla and a nutritious diet.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

REPORT

ON THE PROGRESS OF OPHTHALMIC SURGERY, FOR 1846.

With original Cases and Illustrations.

By W. R. WILDE, M.R.I.A.

SURGEON TO ST. MARK'S OPHTHALMIC HOSPITAL.

Introduction.—As there is no journal in Great Britain exclusively devoted to Ophthalmology, we purpose devoting a section of our periodical to this subject, at least once in every year(*a*). In this Retrospect or Report, we intend to give the cream of the foreign periodicals, particularly of those which are alone occupied with this subject, as the *Annales d'Oculistique*(*b*), and the *Journal für Chirurgie und Augenheilkunde*(*c*), besides notices of all the interesting or valuable matter which may appear either in special works on this subject, or in the current periodical literature of these kingdoms; together with original cases and observations by ourselves, or which shall be furnished to us by others.

In drawing up these Reports, we shall follow the simplest form of arrangement; beginning with the national peculiarities, as well as the congenital malformations and diseases, we shall pass on to the diseases of the eye-lids and lachrymal appendages, and proceed step by step to the deeper-seated textures and the more intense and dangerous affections of the dioptric media, and the nervous apparatus of vision. We shall notice the anatomical and physiological discoveries made in this particular branch of medicine, only so far as they have a practical influence on the treatment of disease. And lastly, this Report may be expected to contain a brief comment

(*a*) The first part of this report was drawn up and put into type for our November Number, but the extent of the Biographical Memoir, the great length of the Medical Miscellany, and the Pathological Proceedings, precluded the possibility of its insertion. It has, however, been since brought up to the latest hour.

(*b*) *Publiées par le Docteur Florent Cunier Medecin-Oculiste, &c., a* Bruxelles.

(*c*) *Herausgegeben von Dr. P. v. Walther und Dr. F. A. v. Ammon.* Berlin.

or review of such works upon Ophthalmic Surgery as are not specially reviewed in the department of the Dublin Quarterly Journal devoted to Reviews and Bibliographical Notices, and which have been published during the twelve months previously.

National Peculiarities.—During the past year we have not noticed the appearance of any special work on diseases of the eye from the British press, and our periodicals are for the same period remarkably deficient on this subject. Toward the close of the year 1845, Dr. S. Furnari published his *Voyage Medicale, dans l'Afrique Septentrionale, ou de l'Ophthalmologie consideree dans ses rapports les differentes Races(a);* a work written in a philosophical spirit, and containing a vast deal of information in a very simple and expressive form. In the commencement of his book, he defines the physical characters of the Arabs, Kabyles, and Moors, the three native races in Algeria. The Arabs, who are tall, thin, of a swarthy complexion, with oblong crania and narrow foreheads, together with light thin bones, the hair black and crisp, the face oval but compressed at the sides, the nose long and presenting an aquiline profile, have, he says, *The Orbital Cavities* larger, and the superciliary ridges more arched and prominent than the generality of mankind. Cruveilhier attributes the sunken appearance of the eye, and the prominent position of its external bony defence, in this race, to the small quantity of adipose substance with which the orbit is provided; but Larrey long since established the fact, that the orbit is more arched in the Arab than in the European. The colour of the eye in the Arab is what is generally termed black, and in the Kabyle this is even more marked. In this race, Furnari says, the tunics of the eye are thicker than usual, but the fact of the greater density of the coats of the eye in persons where the iris is very dark, was long since observed by Maitre Jean, Soemmering, and others. Some children have in early infancy very light blue eyes, which, however, darken in after life.

M. Petrequin has made the following observations on the *Colour of the Eyes* in European latitudes. Of 600 individuals of both sexes he found:

		Males.	Females.
Grey eyes, ...	208	134	39
Blue, ...	134	49	20
Light browne, ...	144	93	19
Brown, ...	134	70	45
Black, ...	14	6	5

The blue and grey may, however, be classed together, and then the disparity between the dark and the light eyes does not appear so great. With regard to the difference of colour among the sexes, the same author has recorded the foregoing results in 489 individuals, 352 males and 137 females, as shewn in the second and third columns: "Thus it will be seen that grey eyes predominate among males, and brown eyes among females. The grey eyes are in the sexes

(*a*) Paris, Bailliere. 1845.

respectively as 1 in 2·6 males, and 1 in 3·5 females; the brown eyes are, on the other hand, 1 in 3 females; 1, and only 1, in 5 males. As a practical application of these remarks, M. Petrequin shews that the old opinion of persons with brown eyes being more subject to iritis and amaurotic congestion was fallacious."(*a*)

We would suggest to our colleagues who have the management of large ophthalmic institutions, to register the colour of the iris in different diseases. From such a registry some very interesting, if not valuable, information would in a few years be acquired.

In all the races in the north of Africa, the ciliæ and also the hairs of the eyebrows are very long, thick, and dark, and the upper eyelid is broader from above downwards than in Europeans. This peculiarity, Furnari thinks, contributes to the production of the entropium and trichiasis so common to these races.

Since the days of the elder Soemmering, very little has been written upon the national peculiarities of the human eye, except such passing notices as appeared in the works of travellers, and the most valuable of these have been collected and arranged by Dr. Prichard, in the various editions of his splended works upon the physical history of man. Furnari has, however, added some interesting particulars to our knowledge on these subjects; his observations are as follows:— In the Kabyles and Negroes, and also in a great number of Arabs, *The Cornea* is from half a line to a line smaller in its circumference, than in the average Europeans, except the inhabitants of Spain and of Sicily, whose blood is still mixed with that of the Arab. The arcus senilis appears very early in life. In the races indigenous to Africa, the cornea is remarkably convex, yet they generally possess exquisitely minute and long sight, and very few are myopic. From this observation an interesting question arises, viz. whether the convexity of the cornea is the sole or principal cause of myopia. Either the convexity of the external tunic of the eye does not correspond with the curves of the other refracting media,—or the convexity of the cornea, does not always, and of necessity constitute *Myopia*. This latter offers the most probable solution; we do not think that short-sightedness depends *alone* upon the peculiar curve of the cornea, in proof of which it may be mentioned, that in most birds, and in several beasts of prey, where the convexity of the cornea is decidedly very great, the vision is very long; while again, in fishes, the cornea is nearly flat, and the lens globular, yet vision is in their medium perfect. Furnari conceives that short-sightedness has its seat in the retina, or is caused by some defect of the optic nerve. May it not with more likelihood be caused by some alteration in the anterior or posterior curve of the lens itself? In many instances this affection would appear to be induced; and from its being so frequently observed among men of sedentary and reading habits, as well as those engaged in delicate manipulations, requiring accurate and minute vision, and so seldom met with in the labouring and lower classes, we

(*a*) The London Medical Gazette, vol. II. N. S. April 10, 1846, p. 665.

are led to conclude that it is induced in a great measure by education and the particular pursuits of the individual. The Arabs, the wild children of the desert, free and uneducated, having no knowledge whatever of letters, without any profession or trade which could oblige them to apply the organ on minute objects, and having no other boundary to the vision than the distant horizon, on which with a cautious glance the eye is often bent, possess,—notwithstanding the well-marked over-convexity of their corneæ,—remarkably long sight. The only persons we ever met in Africa wearing spectacles, were watchmakers, or those Jews, Copts, or Moors, who were employed as scribes, or were engaged in literary pursuits(*a*).

The Sclerotic is said, by Dr. Furnari, to present in the Arabs, in a slight degree, the yellow hue which it does in the Negro.

The Muscles of the Eye and its appendages are remarkably well developed in the northern Africans, either because they exercise the eye so much on distant objects, or because these parts are more frequently called into action to defend the organ from the intense glare and heat. They are also said to be redder than in Europeans, as has been remarked by Larrey, Rostan, and Broc. The restless activity of the eyes in this race must have struck every one who has had an opportunity of observing even a few individuals of it.

The Iris, like the cornea, is very small in the Arabs, and its aperture is said to be more contracted than in Europeans. In all orientals its colour varies in intensity, according to that of the skin and hair, so that in the Negro it is so black that the pupil can scarcely be distinguished from it. In its substance (and particularly the uvea), it is thicker than in Europeans, and is also said to be a little more convex anteriorly.

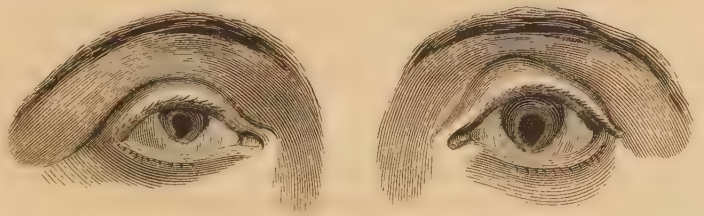
According to the observations of Furnari (but he does not state from what number of actual dissections), *The Crystalline Lens* is smaller and more convex, in fact, rounder, than in Europeans. This, if true, may, in some measure, account for the long sight possessed by these people, while at the same time their corneæ are so convex.

The Choroid, in the inhabitant of Algeria, is very thick, and the pigment upon its surface is remarkably black, even in old persons; whereas, in Europeans it assumes in middle age a pale aspect, which degenerates into a yellowish hue, at old age. This intensity of colour in the visual organs of the inhabitants of a climate of such great heat, and of a light so strong and glaring, and reflected from every surrounding object, is a wise and beautiful provision. We learn that amaurosis is very scarce among the inhabitants of Algeria, and it may be owing to the greater development of colouring matter; for it has been asserted, and with some degree of truth, that, in these countries, seven out of ten persons, labouring under amaurosis and impaired vision have light-coloured eyes, and in several it is said that there is

(*a*) Since these observations were put into type we have received Mr. W. W. Cooper's work upon Near Sight, but want of space prevents our making any extract from it here. We shall refer to it again under another head.

a deficiency of pigment. From this data Furnari is drawn into some theoretical speculations, which, although we attach little weight to them, yet deserve to be mentioned. One is, that in amblyopia and amaurosis, where there is no organic lesion, it would be well to use some of those preparations of iron which might assist to restore the deficiency of the protoxide of that metal in the pigment, as we aim at increasing the quantity of iron in the blood in chlorosis. It might be interesting to experiment after this fashion on the albinos among the lower animals. *Albinism* is considered by the author we are noticing more in the light of a disease than a congenital and incurable defect. There can be little doubt that colouring matter is occasionally deposited in the eyes of albinos in after life; we have ourselves remarked instances of it, and it becomes a question whether, in such cases, remedial agents should be entirely thrown overboard, or whether we should not endeavour, by regimen and other means, to induce an effect which nature sometimes brings about. See the remarkable instances of the partial deposition of pigment, and consequent alteration in colour, in an albino family, published by Dr. Graves some years ago. Albinism is very frequent among the African Jews; but there is this remarkable peculiarity about these people, that their eyelashes, instead of being quite white, are, as as well the skin of the eyelids, covered with minute reddish spots. Dampness, and unwholesome food and air, &c., are enumerated among the causes of albinism; and it is remarkable that the Isthmus of Darien, one of the dampest countries in the world, should possess the greatest number of albinos.

Congenital Malformations.—Having thus far noticed the national peculiarities mentioned by the Author, we beg to add, under the head of congenital malformations, the following interesting case of *Microphthalmia* and *Coloboma Iridis*, which we met since the publication of the second part of our Essay on the Congenital Defects of the Organs of Sight, in September, 1845; and the accompanying wood-cut of this most interesting instance of a peculiar arrest of formation will serve to assist the description:



Mary Craig, aged 22, of stout make and healthy aspect, residing in the county of Wicklow, presents, at first sight, remarkably sunken eyes, and the vacant stare attendant on impaired vision. On examination, the left eye is found to be somewhat less than the natural size; more than a third of the cornea is covered by the upper lid

when she looks straight forward; the sclerotic is natural, but the cornea, though not smaller than usual, is irregular in form; its margin, instead of being circular, is elliptical inferiorly; its curvature, as far as can be judged by the unassisted eye, natural. The iris is of an uniform deep brown colour, and wants those peculiar marks and striæ which characterize this texture in its well-developed state. The pupil is ovoid, and occupies a place in the inferior half of the iris, its upper large extremity being about the centre, and its inferior, pointed end touching the margin of the cornea, where, indeed, there is scarcely any iris visible: it is very slightly moveable, and wants the circles usually observed around its margin. With this eye she was formerly able to distinguish large objects very plainly, but she has latterly lost much vision, and is now scarcely able to find her way with it.

The globe of the right eye is scarcely one-half the size even of the left, and the palpebral aperture, which is a very narrow ellipse, is about a third less than the left; when she looks straight forward the superior lid covers nearly one-half of the cornea, and beneath its lower margin there is a much larger portion of the tunica albuginea seen than is usual in the normal eye. The sclerotic is thin and bluish; the cornea, even in proportion to the very small globe, occupies not more than an eighth or tenth of its circumference. Like that of the left, it is irregular in figure, but its connexion with the sclerotic is sharp and well-defined, and its curvature is less convex than that of the left. The iris is brown, but lighter in colour than the left, and also deficient in striæ and circles. The pupil occupies more than one-half of its perpendicular diameter, and is more triangular than in the left. With this eye she was formerly able to thread a fine needle, but now she is only able to find her way comfortably. There is slight nistagmus of both eyes; but the lids and lachrymal appendages are normal.

The two following cases are worthy of being recorded, from their practical influence in the formation of a speedy and accurate diagnosis. We were lately sent for by Captain B., of whom we had no previous knowledge, and who was then confined to his room from what we were informed was "a severe cold and inflammation of the eye." On arriving at his hotel we found him labouring under great intolerance of light, lachrymation, and some œdema and redness of the lids of the right eye. Being a person of rather eccentric manner, he refused to give any history of his disease, or describe his own feelings and symptoms, until we had pronounced upon his case. On examination we found the entire conjunctiva highly injected, and two large vascular masses projecting from the surface of the globe; one, the lesser in size, and least apparent, protruded from under the upper lid, just beneath the situation of the lachrymal gland, it was of a deeper pink than the rest of the conjunctiva, and appeared firm and unyielding. The second and most remarkable tumour was, in its then condition, about the size of a horse-bean, placed transversely on the globe, one-third of it lying on the cornea, the other two-

thirds occupying the outer side of the sclerotic. Like that which protruded from beneath the lid, this was of a deep pink hue, and slightly lobulated on its surface, not unlike a half-ripe raspberry. A gush of scalding tears, attended with increased pain and photophobia, followed immediately on this examination. We at once pronounced them to be *Congenital Tumours* in a state of inflammation, and such they were; that which encroached on the cornea had several light-coloured hairs growing from its surface. These generally lay quiescent between the palpebral aperture, or projecting slightly over the edge of the lower lid, seldom caused any inconvenience. The largest of these, however, had two days before turned up under the superior lid, and gave rise to all the symptoms we have described. Its removal caused them to subside almost immediately. This case is interesting and instructive on account of its having been first seen during an attack of inflammation, or, more properly speaking, inflammatory irritation, and from the possibility of its being thus mistaken for a sudden morbid growth. What first awakened suspicion, the moment the lids were separated, was the fact of the tumour being covered with cuticular epithelium, which, as in cases of xeroma, gave it the appearance of being oiled or varnished, so that the tears did not flow over it and moisten all its surface, but lay upon it in detached globules. This cuticular character is peculiar to all those growths from which hair grew, which we have examined. We have since seen the eye in a quiescent state, and find our conjectures were correct.

Mr. M., with large prominent eyes and remarkably brilliant irides of a greenish-grey colour, consulted us lately for partial amaurosis. On examining the eyes at about two feet distance, the edge of each pupil appeared remarkably ragged and irregular, so as to look like a case of synechia posterior, the result of iritis, in which the attachment of the iris to the lens had been put upon the stretch by the action of belladonna. Upon a closer view the appearance turned out, however, to be the result of an irregular circle of remarkably black pigment (darker even than that which is usually found upon the uvea) which occupied the inner fifth of the circle of the iris, and was apparently raised above the surface of that membrane. It was with some difficulty that the pupillary margin (which was perfectly normal) could be distinguished at the distance of even twelve inches. The outer edge of this deposit, though most irregular, was very sharply defined. We have occasionally seen detached spots of this nature, but nothing like that which we have now described, nor is there any such case recorded by the writers that we have consulted. Either the pigmentary membrane turned round the pupillary margin and spread over the anterior surface of the iris, or the parenchymatous structure of the iris was congenitally deficient at this point, and allowed the uvea to be seen anteriorly. The circles and radiating lines were not well marked in this person's irides.

We shall reserve the consideration of several interesting cases of the congenital malformations of the iris, choroid, and the dioptric

media for the third part of our essay upon that subject, which shall appear in the Original Communications department of our periodical during the present year.

Diseases of the Eyelids and lachrymal Appendages.—The journals have not afforded much information on this head. We may, however, refer to two cases of *Enlargement of the Lachrymal Gland*, recorded by Dr. Halpin, of Cavan, in the first Number of our present series (Feb., 1846, p. 79). In one of these cases, that of a man aged 40, the disease was apparently of about two years' standing: "The eye-ball was protruded completely from the orbit, lying outside the orbital ridge of the malar bone; the cornea, which presented a healthy appearance, was turned upwards and outwards; the iris contracted moderately on the admission of light, but vision was very much impaired by the straining of the optic nerve, and the pressure of the entire globe by the tumour: the eye-lid was of a dusky, almost purple colour, irregular on its surface, and traversed in various directions by enlarged veins." Dr. Halpin having enumerated the various methods of removing this gland, says that, in order to avoid wounding the thinned and discoloured eye, he drew downwards the tumour till one-half of the eye-brow was below the level of the superciliary ridge; and then, fixing the integuments on the forehead, he made his incision in the centre of and completely through the entire length of the eye-brow. The flap being turned down, a ligature was passed through the gland, and it was dissected entire from its deep connexions. There was no hæmorrhage, and the wound healed by the first intention. The eye-ball gradually regained its natural position, and a month after the operation vision was perfectly restored. "In order," he says, "to ascertain whether tears would flow from an eye deprived of its lachrymal gland, I dipped the blunt end of a probe in Tr. Opii, and touched the conjunctiva with it; immediately the *right* eye became suffused with tears, which flowed over the cheek. At the end of thirty seconds I applied the probe a second time; in sixty seconds after this second application a drop of fluid fell from the left eye, and in thirty seconds more another; this fluid was opaque and whitish; doubtless this appearance was caused by the tincture: the conjunctiva remained red for a considerable time after the application of the tincture. He did not experience any feeling of unusual dryness of the eye-ball since the operation." A year after the operation, Dr. H. informs us: "The sight is as good as ever; no complaint of dryness; but lachrymation is scanty, and excited with difficulty." The tumour, which is now in our possession, is about the size of a hen's egg, smooth upon its surface, and its section presenting a regular homogeneous mass, of a yellow colour, not unlike a roast chestnut; and we quite agree with the author of the paper that "it presents a good specimen of simple interstitial enlargement of the gland." We are strongly inclined to the opinion that most of these enlarged lachrymal glands are of a non-malignant nature.

The second case recorded by Dr. Halpin is involved in some obscurity. The tumour, which occurred in a female, was removed by

Dr. Roe in the Cavan Infirmary in 1844, who says: "It presented a very malignant as well as disfiguring appearance, the tumour occupying the place of the right eye, distending and elongating the upper eye-lid, and partly everting the lower, and compressing out of sight the globe, except at the inner or nasal angle. The integuments of the upper eye-lid were red and inflamed, and highly vascular, giving it a very suspicious and malignant look. The tumour was about the size of a small orange, and had not been attended with much pain until lately, although she had observed it for very many years." The tumour was removed through an incision made in the centre of the upper lid. "It was separated without much difficulty from the roof of the orbit, and gradually turned out and also detached from the eye. Finding, however, I had left a portion of it attached to the sclerotic coat, fearing its malignant nature, and knowing that the vision must be lost, it was thought better and more prudent to remove the whole globe, and any hardened cellular substance in the orbit." We have just been informed by Dr. Halpin that the disease has recently returned in the external canthus. In describing the symptoms of these orbital tumours, Dr. Halpin discusses the views of Dr. O'Beirne, with regard to the condition of the upper lid, the paralytic state of which has been considered by that gentleman as diagnostic of what he terms exophthalmia. By exophthalmia we suppose he means, in this instance at least, tumours situated within the cavity of the orbit, but external to the eye-ball; but it is quite clear that the precise position and anatomical relations of such growths must cause considerable variety in the position of the lid. If the lachrymal gland be the subject of this enlargement, or if a collection of matter takes place between the tunica vaginalis oculi and the roof of the orbit, or in fact if any morbid growth or fluid occupies the upper portion of the orbit, that is, the space between the globe and the orbital plate of the frontal bone, it is evident that if it presses forwards it must propel and depress the superior lid, no matter from which side of the levator palpebræ muscle it grows. But if such a growth proceeds from the apex of the orbit, it is manifest that it will protrude the eye-ball directly forward and not affect either lids; while a tumour or a collection of fluid, or an inflammation of the cellular tissue of the orbit occurring in its lower portion, yet still coming under the head of exophthalmia or exophthalmos, cannot in any way affect the upper lid. We assisted Mr. Cusack last autumn to remove a tumour, about the size of a large walnut, from the inferior portion of the orbit between it and the globe; here the pupil was slightly turned upwards and the lower lid bulged forward by the mechanical pressure of the abnormal growth, but the upper lid was quite unaffected(*a*). The following cases and remarks are also highly illustrative of the subject:—

In the beginning of this year, Dr. O'Ferrall, the surgeon in chief to St. Vincent's Hospital, in this city, published a most valuable

(*a*) See also on this subject *Gazette Medicale.* No. xxxvii, p. 723, where Dr. Halpin's case is quoted.

series of lectures upon the diagnosis and treatment of *Tumours in the Orbit*, in the Dublin Hospital Gazette. The valuable observations published by this gentleman, in the nineteenth volume of our former series, upon affections of the orbit, his extensive opportunities, and his acknowledged powers of diagnosis, led us to look forward with considerable interest to the publication of the cases related in the Hospital Gazette(*a*), of which the following is a brief abstract :—A man aged 21 had a painless tumour in the upper portion of the orbit, which protruded the eye, then partially amaurotid, downwards, forwards, and inwards, at least three-quarters of an inch beyond the plane of the sound eye. The upper lid was expanded to more than three times its ordinary dimensions, while the lower did not exceed its usual measurement. These characters of the lid serve, according to Dr. O'Ferrall, to shew the locality of the depressing force, namely, in the cellular tissue of the orbit, above the fibrous and muscular tissues which enveloped the eye. The tumour was irregularly elastic, yet apparently uniform in consistence. It was removed entire by means of a free incision parallel with and just below the eye-brow. It was found, as is frequently the case in these orbital tumours, to have descended deeper into the orbit than was at first imagined, or than could have been diagnosed by any previous examination. The tumour was found to be lobulated throughout, firm, elastic, and covered by a fine cellular capsule, which dipped into its structure. Its section presented a white, fibrous, and pearly surface, uniform in density, and brittle in fracture, exuding a creamy fluid under pressure; a portion of it placed under the field of a microscope exhibited all the characters of malignant disease. It is stated in the report that the mass bore no resemblance to the lachrymal gland, but that after its removal no trace of that body "could be felt remaining behind." Eighteen months subsequently the

(*a*) The Dublin Hospital Gazette, vol. ii., 1845–6, pp 161 to 241. We are indebted to Dr. O'Ferrall for the use of the wood-cuts used in this portion of our report.

tumour had not returned; the eye-ball had regained its natural position, but vision was still affected. It was of a year's duration when removed.

A girl aged 12:—Tumour in the right orbit, of seven months' duration, projecting the eye-ball downwards and outwards upon the cheek, quite without the orbit. An irregular tumour occupied the interval between the eye-brow and the eye, and from a point near the external margin of the orbit, to the internal side, the entire of which latter it completely filled. She suffered pain both in the eye and tumour; the integuments were discoloured, and of a mottled, dusky, pale rose colour, and tinged with yellow. The inferior portion of the lid below the transverse fold was natural and unaffected by the disease; vision very indistinct. The tumour was removed through an incision parallel with the brow, similar to the preceding case; and the wound healed rapidly, except at one point, where it remained fistulous for about a month. The eye, it is said, gradually returned into the orbit, but at the end of three months it had not quite ascended to the level of the sound eye; the visual power was also improved. Upon examination, the tumour appeared in some places to have the consistence of softened cartilage, and in others it had a pulpy appearance; its colour varied according to its densities, the firmest portions having a yellowish white tint, the softer being reddened, and exhibiting small bloody clots. "I considered it," says the author in his remarks, "to be a growth in the cellular and adipose tissue of the orbit, and lying between the roof of the cavity and the fibrous layers which enclose the eye and its appendages, and I believed it to be, as its dissection afterwards demonstrated, of the nature of cephaloma. The absence of other evidence of constitutional taint, and the certainty that it could not remain much longer in its situation without destruction of life," was the cause of its removal. The girl left the hospital in the end of 1841, but has not since been heard of, therefore the ultimate result of the removal of this tumour is still doubtful.

A female aged 23:—Cystiform tumour in the orbit, with protrusion and disorganization of the eye, which commenced eight years previous to her admission into hospital; she said the swelling of the eye began with nocturnal pains, and that the tumour from which she then suffered had been already three times operated upon. After the first operation it did not return for three years; on the second occasion the operation was not attended with any diminution of the swelling; the third time "the tumour was laid open, but it soon filled again."

"The left eye-ball protrudes so far, and descends so low on the cheek, that, when it is moved by its muscles, it brings to recollection the telescopic eye of the camelion. The large, thickened, and expanded superior eye-lid, descends, on the cheek, as low as its middle; but it no longer covers the globe of the eye. The eye-ball, ejected from beneath its natural curtain, lies naked upon the cheek, an inch below the tarsal margin of the eye-lid, and exposing three-fourths of its sphere to the contact and irritation of the air. The conjunctiva covering the sclerotic presents a close network of vessels, of venous and arterial hue. The globe itself is of the natural size, except its corneal portion, which is atrophied. The colour of the cornea is fleshy, and exhibits no traces of its original organization. The eye is in a state of constant movement, which, although evidently painful to the poor girl, cannot be restrained. Every movement of the sound eye is accompanied by a similar, though limited movement of the diseased eye, although the muscles must be elongated to double their natural measurement. It yields to the slightest touch, and is very elastic in recovering its figure. It imparts the sensation of fluid, but not the fluidity of serosity or pus. The idea of the white of an egg is that conveyed to the fingers, on a light manipulation of its surface." She suffered constant pain and irritation, besides which she was subject to paroxysms of spasmodic pain, occurring generally in the evening, during which she described her sufferings as amounting to agony; she had completely lost her rest, and felt totally exhausted. She was unwilling to submit to another operation on the tumour, and with difficulty

consented to a small puncture being made in it ; from this a glairy fluid escaped, accompanied with some hæmorrhage.

" In this state of matters," says Dr. O'Ferrall, " it occurred to me that the removal of the useless eye might mitigate her sufferings. I proposed this operation in consultation, but was not so fortunate as to make an impression in favour of the proceeding. The grounds on which I suggested the operation were,—first, that the tumour, not being malignant, was probably not the source of the sufferings under which the patient pined away. Secondly, that the extraordinary elongation and tension of the muscles and nerve were, most probably, sufficient to account for the symptoms. And thirdly, that a disorganized and useless eye might be removed without detriment to the patient, and as an *anceps remedium* was, in such a state of suffering and decline, fully justifiable." The protruded globe was removed without difficulty, and on the following day a decided amendment in all her symptoms was experienced. " She is now (February, 1846) in excellent health; the tumour has scarcely increased in size, and gives her no inconvenience. The globe exhibited the usual appearance of an eye destroyed by inflammation. The transparent cornea was replaced by a fleshy substance, having no resemblance to its natural structure. Its antero-posterior diameter was flattened by pressure."

We quote the following judicious observations of the author, which entirely coincide with our own views on the subject, and are in accordance with the result of a case on which we operated some years ago, and which we shall describe at another time. " The composition of the tumour in this case, unlike those already related, was an union of solid and fluid elements, resembling in this respect the encysted tumours of the neck, ovary, and other parts. The complete identification of its solid portion with the periosteum of the roof of the orbit, rendered its extirpation impracticable. The result of two separate operations were conclusive on this point. The cystiform portion of the tumour had been reproduced after evacuation, and left no hope of its obliteration except by dressing the sac from the bottom, and obviating the incidental irritation by appropriate means. Some who examined this tumour considered it to be malignant, and others were of opinion that the cyst, when freely exposed, might throw out a fungus, and add to her calamities. The extirpation of the eye, already disorganized, appeared to me to be the rational indication. It was the peculiar and painful condition of the eye and its appendages which menaced the existence of the patient. In ordinary cases of tumour in the orbit the protrusion of the eye-ball is of gradual occurrence, and the parts are gradually accustomed to the extension. In ordinary cases also the globe is still covered by its lid, and is thus protected from the contact of foreign or irritating agencies. Under such circumstances extension is the only impression to which the parts are exposed. In the present case the extension of the nerve and muscles exceeded the usual limits in such instances; and there was besides superadded another cause of

irritation, of far greater power to create suffering, namely, spasm of the muscles of the part. In the present case the eye, no longer covered by its lid, was night and day exposed to atmospheric contact, and the extreme vascularity of its surface shewed the degree of excitement kept up in its organization. To this exposed condition, therefore, together with the more than usual elongation of the parts, I attribute the agonizing paroxysms of spasmodic pain, and pressure upon the eye-ball, which exhausted the strength and spirits of the patient. The extirpation of the eye, then, in the present case, was performed on a principle novel in the history of this operation, but justified, I have reason to think, by previous considerations, as well as by the very fortunate result."

Cases 4 and 5:—Abscesses in the orbit causing depression of the globe. These were good examples of sub-acute abscesses in the orbit, but not presenting any very remarkable symptoms from those already described elsewhere, it is unnecessary to detail them; they were punctured, and the patients did well.

Dr. O'Ferrall's sixth case was one of protrusion of the eye from inflammation of its fibrous investments in a woman aged thirty-four. It commenced twelve months previously with dimness of the left eye unaccompanied with pain; at the end of the third month vision was totally lost, and then severe pain and lachrymation commenced; these symptoms were relieved by treatment until three days before admission, when she suffered intense pain in the globe, and found the organ projecting. On admission the eye was found protruded three-fourths of an inch beyond its fellow, and its movements much restricted; the lid was œdematous and of a dusky red colour; there was considerable chemosis and lachrymation, but the cornea was clear, the pulse small and intermitting, the patient languid and not inclined to sleep. Under the influence of calomel and opium these symptoms subsided and the eye retired. Cases of this description are by no means uncommon in the practice of every ophthalmic surgeon. It is evident that it was one of general ophthalmitis; the chemosis was of an amber colour, which we have frequently observed in cases of intense inflammation occurring in eyes where vision had long previously been lost from some disorganizing process within the globe, and the lens, which is stated in the report as "of an opaque yellow hue, and projecting a little into the anterior chamber," was in all probability covered with lymph. The author enters into an explanation of the anatomical arrangement of the structures in the orbit, and says that the fibrous membrane, to which he has given the name of *Tunica Vaginalis Oculi*, which envelopes the orbit, limited the inflammation in this instance and caused the protuberance of the eye.

He next gives a description of the structures engaged in these diseases of the orbit, and explains the best mode of demonstrating them (see vol. xix. of our former series for 1841), and comes to the conclusion that we can, by the anatomical knowledge thus acquired, explain "the correspondence between the locality of the internal

mischief and the limitation of vascularity to certain portions of the lid," and thus "that inflammation, serous effusion, or abscess within the tunica vaginalis oculi generally affects the lower division of the palpebra ; while similar changes, external to the fibrous tissue, are indicated externally by corresponding alterations in the upper portion." Our space does not permit us to enlarge further upon this subject, but we strongly recommend Dr. O'Ferrall's concluding clinical remarks, in the twenty-eighth number of the Dublin Hospital Gazette, to the attention of our readers.

Before, however, we take leave of this portion of the subject, we beg to observe, that Dr. O'Ferrall's claims to originality in investigating the structures of the orbit have been, on the one hand, very much overlooked, while, on the other, they have been very much misunderstood. A few years ago this gentleman drew particular attention to the subject in a paper which he read at the Royal Irish Academy upon the anatomy of certain structures within the orbit, and which paper, with some most interesting pathological additions, was reprinted in our former series. Nearly contemporaneously, however, with Dr. O'Ferrall, M. Bonnet of Lyons, and Mr. Bennet Lucas of London, described the same structures, although they did not demonstrate them in the same ingenious manner(*a*). In 1834, however, Mr. Dalrymple, in his Anatomy of the Eye, had accurately described this peculiar capsule; but long before the appearance of Mr. Dalrymple's work, a French observer, M. Tenon, in his *Memoires et Observationes sur l'Anatomie, la Pathologie, et la Chirurgie, et particulierement sur l'Organe de l'Oiel*, published in Paris in 1806, described this tunica vaginalis oculi, and therefore to him, as far as we yet know, the priority of the anatomical discovery is due; and yet we have no doubt than none of the authors who have recently described this structure have in anywise plagiarised from him. Malgaigne's name and writings should likewise be mentioned in connexion with this topic. In his *Traité d'Anatomie Chirurgicale*, which appeared in 1838, he described this fascia under the old name of *Tunica Albuginea*, but at the same time acknowledged the claims of Tenon, although he does not seem to be aware of the investigations of Mr. Dalrymple. When squint-cutting was the rage, surgeons naturally turned their attention to the anatomical relations of the muscles and other structures within the orbit; and MM. Guerin and Malgaigne both gave descriptions of this tunic, particularly the latter, in the fourth edition of his Manual of Operative Surgery(*b*), published in 1843, two years subsequent to Dr. O'Ferrall's treatise, with which he does not appear to be acquainted. He describes this membrane with great accuracy, shewing that it consists of two portions, one enveloping the sclerotic, and extending in a funnel-shaped envelope from the cornea to the sheath of the optic nerve; the other forming fibrous capsules for the muscles (as specified by Guerin

(*a*) See also Braithwaite's Retrospect, vol. iv. No. iv.
(*b*) *Manual de Medecine Operatoire*, p. 376, 4th edit.

under the title of *toge musculaire*). The reflection of the muscular or orbital from the sclerotic portion may cause the appearance of pulleys when accurately dissected. But anatomical discoveries are often the result of accident, pathological investigations generally follow from deep study and multiplied observations; and undoubtedly to our countryman, Dr. O'Ferrall, is due the entire credit of having explained and diagnosed some most interesting affections of the orbit, by a knowledge of this peculiar investing membrane, which separates the muscles from the globe, and also isolates certain affections occurring within that cavity, at the same time that its connexions with the lids externally is of great value in pointing out the seat of these morbid products(*a*).

M. Tavignot divides tumours of the orbit into eight genera: phlegmons, chronic abscesses, exostoses, lipomæ, cysts, cancers, aneurisms, and erectile growths(*b*).

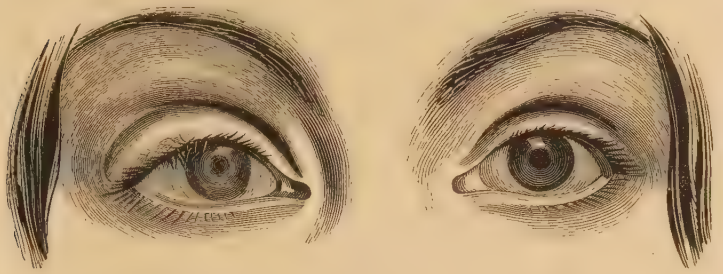
On the Causes and premonitory Symptoms of Entropium and Trichiasis in the upper Lid.—Since the publication of our remarks upon these diseases, contained in the twenty-fifth and twenty-eighth volumes of the former series of this periodical, we have continued to pay particular attention to these affections, which are, perhaps, more frequent in Ireland than in any country in Europe of the same amount of population; and while our increased experience but confirms the opinion which we then expressed with regard to the causes and the cure of these most distressing complaints, we have been enabled, from a vast number of cases, to increase our knowledge upon the subject by diagnosing the disease at an earlier stage than has yet been effected. It is well known that persons labouring under entropium (who are generally in the lower ranks of society) seldom apply for relief until the disease is so well marked that it is scarcely possible to mistake it, and so far advanced that considerable mischief has been done to the cornea and conjunctiva by the irritation of the offending hairs. Although the inversion of the upper lid is sometimes very rapidly produced, yet, generally speaking, it is a slow and gradual process, requiring months and often years for its complete development. A report of this nature is unsuited for any lengthened or detailed account of this affection, but the following observations, formed upon a great number of cases, may serve to call the attention of ophthalmic surgeons to the subject.

When we look at a healthy eye, on a level with our own, the ciliæ of the upper lid should project so much forwards that we should see but the dark line of fringe which their points form. If the eye be directed downwards, and the lid falls a little, the upper surface of these hairs comes into view. The eye-lid forms two folds ; the superior, large, flexible one, which is carried inwards by the action of the

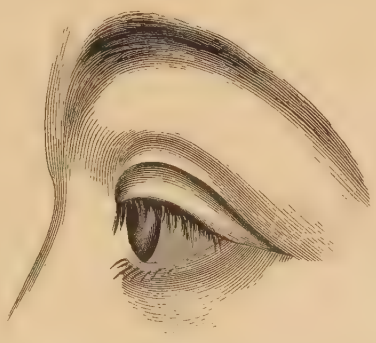
(*a*) See an interesting case of exophthalmics in *Gazette des Hospitaux* for Aug. 22nd.

(*b*) *Revue Medicale*, for April, p. 594; and *Gazette Medico-Chirurgicale*, Fev.

levator palpebræ; and the inferior, lesser one, which is generally about three-eighths of an inch deep, and to which the integuments are intimately attached, as exhibited in the left eye of the accompanying woodcut.



When the lid droops or is closed by a voluntary effort, the superior, large, loose, and flexible fold is obliterated. Now in persons labouring under incipient entropium, long before any inversion or distortion of the lashes has taken place, the lower fold becomes preternaturally developed, as seen in the right eye of the foregoing illustration, made from a drawing of a young woman, who, at the time it was taken, had been labouring under the disease for four years previously. And, moreover, if we examine such an eye in profile, we shall find that this fold has become not only more developed, but that its curvature, which, in the normal state, is but slightly convex in the infero-superior direction, has become preternally increased, so as to present the form shewn in this representation, which was taken from a female who was not at the time (twelve months ago) at all conscious of her condition, as the lashes which, with the fold of the lid, were bent very much downwards, had not then quite touched the cornea. This vicious bend of the inferior fold of the lid is often of years' standing before it is perceived. When we evert the lid, the cause becomes manifest; immediately behind the line of the meibomian glands we perceive a deep curve or hollow in the cartilage running along the entire length of the lid, as we have endeavoured to represent in the wood-cut on the next page, taken from a drawing of the right eye of the girl whose representation is figured above.



This sulcus or depression in the cartilage has invariably a shining, tendinous appearance, and several conjunctival vessels may be seen running into it; and, as the disease advances, it has the appearance of a deep and rugged cicatrice, not unlike those marks which we perceive upon the inner surface of a lid which has been cured of granulations. All this time the conjunctiva lining the cartilage may be perfectly smooth and scarcely more vascular than natural, while the tissues of the eye itself may never have suffered from disease. Chronic ophthalmia is, no doubt, at times a cause of entropium, but, we believe, a much less frequent one than is generally supposed. We have lately seen several cases of inversion, both in the incipient and fully developed stage, in which there never had been any inflammatory affection of the ocular tunics. It is scarcely necessary to add, that when the disease is fully established, this internal sulcus becomes more deeply developed. The subjective symptoms are but very trifling; the patient complains of little or no uneasiness until one or more of the lashes touch the globe. At times, persons labouring under the incipient form complain of a tightness of the lid, and say that when they move it they feel as if it scraped the eye. This tightness, however, is not (as we observed in our former essay on this subject) caused by any shortening of the transverse length of the lid, but by its increased curvature from above downward.

We have often wondered why entropium was not induced by the pressure upon the eye-lashes of those glasses which it is now the fashion to squeeze into the orbit.

A careful examination of a few such cases as we have here described, will shew the inadequacy of any operation save that of completely removing the ciliæ, when they come to offend or irritate the eye. No incision made in the cartilage at right angles with this sulcus can ever restore its position; and we believe that those cases which have been relieved by the disfiguring and painful operation which Mr. Guthrie proposed as an addition to that of Sir P. Crampton's, were cured by making the longitudinal incision through the length of this morbid groove. It is evident that neither caustics nor astringents can effect any good in the early stages of this disease. We think we have succeeded in arresting its progress by the application of nitric acid to the integuments covering the fold externally, but it will require some time to decide on the value of this remedy.

Furnari says, that out of one hundred persons with sore eyes in North Africa, twenty-five have entropium and trichiasis, and believes that the great length of the eye-lids in the people of that region contributes to the production of this disease, a theory that tells in favour of the observations contained in the foregoing

notice. Lateral curvature of the spine, caused by photophobia, is no uncommon occurrence in children in Algeria and Egypt.

A new Instrument for removing palpebral Tumours.—Dr. Desmarres, formerly assistant to Dr. Sichel of Paris, has invented a new description of forceps for the more convenient removal of those little encysted and other tumours which so frequently occur in the eyelids. The posterior blade of this is expanded into an oval, slightly convex surface, about three-quarters of an inch in length ; the anterior blade forms a ring the size of the outer margin of the posterior plate, and not unaptly resembles the ring of a key. These two branches, which separate by the usual spring in the shoulder of the instrument, can be retained in close approximation by means of a screw and nut placed a little below the roughened portion of the handles. The mode of using this instrument is to pass the smooth, polished posterior blade between the lid and the globe, and then, by screwing down the outer ring, compress within its circle a small portion of the lid. The object of the inventor is, by the pressure which it exercises, to arrest the annoying hæmorrhage which invariably occurs from removing those tumours externally, somewhat in the same manner as the pressure of the lip between the fingers arrests the hæmorrhage in the coronary arteries in removing cancer from that part.

For the object for which it was intended by the inventor this instrument produces the desired effect; but in the cases in which we tried it, the irritation and uneasiness attending its application appeared almost as great as the pain attending the operation of removing the tumour. The intention of this, and its practical application, is, however, in our opinion, not only unnecessary, but, in the generality of instances, positively incorrect. The majority of tumours occurring in the palpebræ are of the encysted kind, the contents of which are, particularly in their advanced stage, semi-fluid, frequently quite purulent. They are to be removed most effectually and with least pain from within. They should be allowed to advance to at least the size of a pea, unless they produce decided inconvenience, before they are interfered with. Their original seat is generally under the orbicular muscle, and if allowed to proceed without interference, they, in the great majority of instances, point internally, their seat being at once recognised by the ophthalmic surgeon, on everting the lid, by certain well-known appearances, namely, at first a slight dimple in the cartilage ; then an increased redness deepening into a purple hue; afterwards a central elevation, which in process of time becomes yellow, from the absorption of the cartilage permitting the contents of the tumour to appear through, while the surrounding redness still continues.

As the disease advances, a small aperture, not larger than a pinhole, is found in the centre of this yellow point, and through it the more fluid part of the contents is gradually discharged. If allowed to advance unchecked, the next stage of the disease is very remarkable; a fleshy papilla about the size of a split pea forms around this

aperture. Upon examining this minutely we find that the opening occurs in its centre, and that its edge overlaps the conjunctiva like a mushroom. If the patient presents with the disease in this advanced stage, this little fungous growth should at once be removed with a pair of curved scissars, but that will not cure the original affection. In whatever stage it presents,—and we would not advise its being interfered with till that of the yellow elevation,—it should be cut into (the lid being held in its inverted position by an assistant) with a very small, sharp-pointed scalpel, the blade of which is not above one-eighth of an inch in diameter. Unless the cartilage has become very much thinned, it is not easy to squeeze out the entire contents; but the following mode of procedure we have found perfectly effectual. With a fine silver spatula, such as that represented in our paper on otorrhœa in the twenty-fourth volume of the former series of this Journal, we press out the entire contents, and then having coated the extreme top of a small piece of silver wire with nitrate of silver (by dipping it into some melted caustic), so as just to coat its surface, we pass it rapidly through the incision, and roll it round in the sac, smearing the opening we have made with oil, in order to prevent any particles of the caustic which may adhere to it irritating the ocular conjunctiva. During the last three years which we have employed this mode of operating, we have scarcely ever witnessed a return of the disease.

There are, however, a class of tumours which occur in the palpebræ, the contents of which are of a much firmer nature than that last described, and which, in many instances, cannot be pressed out after an external opening has been made. From their resemblance to the structure of the conglomerate glands, they have been denominated *glandiform* by the late Mr. Tyrrell. They do not point internally, and therefore cannot be removed through the cartilage. They must be dissected out externally. One of their most frequent seats is in the lower lid, just beneath the punctum lachrymale, and when such is their situation we find that passing a probe into the lachrymal sac not only facilitates their removal, but insures the safety of the duct. In tumours of this description the instrument of Desmarres will be found useful. Some of these tumours not inaptly resemble, when rubbed between the fingers after their removal, a grain of swan-shot, so hard and unyielding are they. In the paper of the Parisian oculist in which the instrument is described, he enters at some length into the general management of these tumours, and recommends the use of various ointments for their dispersion ; but, though we have given a fair trial to such means, we must say they have invariably proved inefficacious(*a*). In removing those small tarsal tumours externally, or in performing any minute operation upon the eyelids, where, from the very great and often abnormal vascularity of the parts, such hæmorrhage ensues as continually to obscure the growth which we are desirous to remove, the assistant

(*a*) *Annales d'Oculistique* for September, p. 111.

should be provided with a piece of fine sponge, about the size of a hazle-nut, held within the blades of a spring forceps, with which the blood should be continually absorbed. Dr. Sichel has recently noticed a small lipomatous tumour, of a yellow hue, situated in the substance of the lid, and generally towards the internal angle, which he states is usually connected with diseased liver, especially hypertrophy and fatty degeneration of that organ. If these little bodies are extirpated, they are reproduced, and their complete removal is only to be effected by an improvement of the predisposing cause.

Lachrymal Calculus.—Mr. Syme of Edinburgh has recorded a case of this rare affection in a man who five years previously "had let a little lime get into his eye: it presented all the appearance of a mucocle. Upon careful examination, however, it was found that the swelling was not in the sac but in the inferior lachrymal duct. It was removed by opening into the sac, and proved to be about the size of a 'barleycorn'; of an irregular form with tuberculated surface, and of a dark brown colour, so as very much to resemble a mulberry calculus in miniature." The chemical constituents are not given, but these bodies which generally resemble salivary calculi mostly consist of phosphate and carbonate of lime with animal matter(*a*). Dacryolotes, though now of rare occurrence, do not appear to have been so uncommon in the days of Le Dran, who gives a very good description of them.

A case styled *Emphysema of the Eye-lid*, from rupture of the lachrymal sac, has been going the rounds of the periodicals. It was originally reported by M. F. Dubois, of Neufchatel(*b*), but, from the account we read of it, it does not appear to have been more than an ordinary case of emphysema of the lids, which sometimes occurs from merely blowing the nose, in which the rupture is generally in the nasal mucous membrane.

Strabismus.—Mr. Brett, late superintendent of the Eye Infirmary at Calcutta, has furnished the Lancet of the 25th of April last with the result of his experience in removing this deformity by operation, and Mr. Walton of the Central London Opthalmic Institution has followed on the same subject in the recent numbers of the Medical Times(*c*). But we do not find anything in their descriptions but what was already known and practised by those who have been extensively engaged in this operation; and we would refer the authors of these papers to our communication on the subject, published in the Number of the Dublin Medical Journal for November, 1845, particularly with regard to the mode of fixing the eye, the ligatures upon the divided end of the muscle in certain cases, and the sutures of the conjunctiva(*d*). Owing to the great number of cases which were operated

(*a*) Edinburgh Monthly Journal of Medical Science, and Medical Gazette, for 12th June, 1846.

(*b*) *Journal de Chirurgie* for May, 1846.

(*c*) Medical Times for 2nd and 9th of January.

(*d*) To obviate the depression at the inner angle, and the protrusion of the globe, which sometimes follow this operation, M. Phillipi of Bourdeaux says that he has

upon in which the operation was totally inapplicable, and the failures—or, what is worse than failures, the distortions—that ensued, the public and several of the profession are still in doubt as to the propriety of interfering in any case of squint ; it is of consequence that those who have been extensively engaged in these operations should honestly state their experience; and it is of particular moment that, where opportunities occur, *post-mortem* examinations should be made of eyes which have been operated upon, in order to see what change has taken place in the divided muscle.

Herr Böhm, of Berlin, has lately published a large monograph upon this subject(*a*), and given the result of four dissections of eyes which had been previously operated upon for strabismus. In one, a girl aged seventeen had the operation performed for very severe strabismus, consequent on corneal opacity, four months previous to death. Upon dissection, the conjunctiva was found firmly adherent to the sclerotic, particularly toward the inner side ; the posterior fragment of the rectus muscle, which had been divided, was found to have contracted within the orbit, and to have formed a new attachment to the sclerotic, about three lines posterior to its original insertion, and its nasal surface and edges were intimately united to the conjunctiva.

A young man who had been cured of strabismus by the usual operation eight months previously, died in June, 1841 ; by the advice of Professor Schlem, the orbit was examined in the manner in which we usually dissect it, from above downwards. The internal rectus at once attracted attention from its shortness compared with the other straight muscles of the eye, as well as from the length of its tendon, or, more properly speaking, thick aponeurosis, which was connected with the globe only through the intervention of the hypertrophied conjunctiva ; therefore in this case there was no secondary insertion of the muscle ; but this we think the exception rather than the rule.

A girl aged fifteen had both internal recti divided in July, 1841. This was followed by divergence of both eyes, gradually increasing during the three following months. She died two years afterwards, and the following appearances were observed. In the right eye, that which turned most outward, the divided end of the muscle was found lying free in the cellular texture between the conjunctiva and sclerotic, and therefore could not exercise any power over the globe ; and in the left, where the newly-acquired divergence was not so great, the

employed the following means: " To make but a small aperture in the conjunctiva, and to endeavour to promote the union of the ends of the divided muscle."—*Gazette des Hopitaux*, 18th June, 1846. And to effect this latter he divides it as far back in its fleshy portion as possible. We cannot agree with this theory, nor do we acknowledge the facts deduced by M. Phillipi. We think that when strabismus returns, it is in consequence of some fibre of the muscle having been originally omitted in the incision, or its divided ends reuniting.

(*a*) Das Schielen und der Sehnenschnitt in seinen Wirkungen auf Stellung und Sehkraft der Augen. Von Ludwig Böhm. Berlin, 1845.

divided end of the muscle was found attached to the conjunctiva, and, through its agency, had continued to exercise some power over the eye.

A woman, aged 40, was affected with slight diverging strabismus, accompanied with irregular motion of both eyes; thus, when the right eye was turned outwards, the pupil of the left was turned upwards, and so remained till the right assumed its straight position. If the right, on the contrary, was turned inwards, the pupil of the left was instantaneously turned downwards, and would so remain till the right assumed the straight position. Upon the peculiar condition of the muscles in this case many ingenious speculations were broached, but upon dissection, two years subsequently, the entire contents of the orbit were found perfectly natural.

The following interesting case is appended to Herr Böhm's observations. A man, aged 19, had squinted outwards in the right eye since his childhood. At six years old this affection was attended with double vision, but without pain or other inconvenience. The globe then gradually protruded, and the pupil now turned upwards and outwards, and at nineteen his vision in that eye had decreased so much that he could scarcely distinguish one coin from another. He was advised against having the operation performed, and the cause of the disease was diagnosed to be a non-malignant swelling at the bottom of the orbit. As he died of consumption at Berlin, an opportunity was afforded for the following interesting dissection. The optic nerve, for something more than a quarter of an inch posterior to its insertion into the sclerotic, was normal, but behind that it swelled out to the size and shape of a large olive, which lay across the bottom of the orbit, and projected the globe forwards and outwards in the manner we have described. Behind this swelling it again assumed its natural size, and turning back through the foramen opticum into the cranium, continued natural through the remainder of its course. The swelling had an unnaturally hard feel, and, when cut across, was found to consist chiefly of the thickened neurilema. Examined under the microscope the nervous matter was found unaltered. Swellings upon the nerves, in other parts of the body, are not unusual; but in the optic nerve it is a very rare occurrence indeed. The observations of M. Bouvoir confirm those of the Berlin surgeon, in shewing that the divided muscle generally forms a new and posterior insertion into the scelrotic. Further observations upon the subject will be received with much interest.

Cases have lately been recorded in the journals, in which accidental displacement of the pupil has effected the spontaneous cure of strabismus(*a*), and it has also been proposed to effect, by operation, an internal obliquity, in order to obviate the necessity of artificial pupil. Without entering at any length into this subject, we may mention that there are certain cases of strabismus in which

(*a*) *Gazette Medicale*, No. 35. Aug. 29.

the want of parallelism is caused by the foci of the eyes being of different lengths—that in which the focus is shortest, being almost invariably the eye to turn in, and such cases may be greatly improved, if not entirely remedied, by the use of glasses. There are other cases of strabismus which appear to be caused by certain portions of the retina becoming insensible; and in such cases, we should be very cautious indeed how we interfere, for it is quite possible that the removal of the deformity may render the patient's vision much less distinct than before. Under the head of strabismus, we would refer our readers to Mr. Brooke's paper on the advantages of sub-conjunctival tenotomy, communicated to the London Medical and Chirurgical Society(*a*).

Ectropion.—Several cases of this affection have been recorded in the journals; as they do not, however, present any remarkable peculiarities, and were generally removed by some of the operations already recommended by Fricke, Ammon, Dieffenbach, and others, they do not afford novelty sufficient for insertion here. Cases of this kind occur daily in the practice of every surgeon, but, unless accompanied by some form of illustration, they add little to what is already known upon this subject.

Symblepharon.—During the last two years, the number of cases where, from mechanical or chemical injuries, adhesion between the ocular and palpebral conjunctiva had resulted, which presented at St. Mark's Ophthalmic Hospital, caused us to pay particular attention to this subject, and we have found the following mode of operating perfectly successful, even in cases in which the method formerly in use, of merely dividing the frœna or extensive adhesions, had been more than once previously resorted to without effect. Some of these cases consisted in complete adhesion of either upper or lower lid, through the greater portion of its extent, to the surface of the globe; the newly-organized material, or dense, fibrous, connecting band, in some cases merely approaching the margin of the cornea, in others expanding largely over its surface, and rendering vision more or less imperfect. In some, the motion of the lid was completely checked by the shortness of the frœnum and the intimate cellular connexion between the lid and globe, by which the motions of both were greatly curtailed: others, again, particularly where they proceeded from the angles of the eye toward the centre of the cornea, strongly resembled fleshy ptyregia. Beside these divisions, there is another which, in a pathological point of view, should be attended to; namely, into those which are attached by their whole length, and those in which the new attachment or adventitious membrane forms a bridge, leaving a portion (at the apex of the triangle) of either ocular or palpebral conjunctiva free. In these latter cases, a fine, flexible wire probe was passed under the arch, and where such arch or bridge did not exist, it was pushed through the lowest part of the adhesion, and its ends held by an assistant, or

(*a*) Lancet for July 7, p. 160.

retained in the left hand of the operator. By this means the globe was fixed, and the lid drawn forwards. The dissection was then commenced at the point most distant from the cornea, and we endeavoured to make the flap raised up as large as possible. In effecting this, our efforts will be greatly facilitated by doubling up the probe, and by its means drawing out the ptyregium from the globe. In this way we have succeeded in dissecting a very large flap of membrane off the entire surface of the cornea. If, upon examining the point from which it is reflected from the lid, it be found to have too extensive a base in the perpendicular direction, the lid should be everted, and this again lessened by repeated touches of a fine scalpel. The extreme apex of the flap should then be attached by a fine suture to the lowest point of raw surface on the *interior of the lid*, and other sutures applied along its edges as the extent of surface may require. By this means the external mucous or cuticular surface of the old adhesion or ptyregum will be presented to the raw surface of the subconjunctival cellular tissue on the globe, and thus adhesion completely prevented. Where this latter has been but of moderate extent, we have drawn the conjunctiva together, and closed it by three or four points of fine suture. There are cases in which the base of the triangle formed by the adhesion is on the globe, and the apex at the margin of the lid, leaving a large surface of the palpebral conjunctiva unaffected, and here we might be inclined merely to divide the frœna; but if the opacity has spread over the cornea, although we may succeed in removing the more immediate cause of the deformity, the leucoma will inevitably remain, and therefore we have, in such cases, carefully dissected the membrane off the cornea, and removing a portion of the palpebral conjunctiva, substituted the flap in its place, attaching it as already described.

We would recommend as long a time as possible to be allowed to elapse between the origin of the disease and the period of the operation, for by so doing, the band of adhesion becomes considerably lengthened, and also lessened in vascularity.

The principle of this operation has long been known, but has not, we believe, been hitherto acted on in this country. Dieffenbach has, we believe, described a mode of operating somewhat similar in principle, and M. Blandin has related a case during the last year, in which he succeeded in removing a symblepharon by a somewhat analogous proceeding(*a*).

Ptosis.—Mr. France has published an interesting paper on this subject in the last volume of Guy's Hospital Reports(*b*), and has detailed thirteen cases, which he treated for this affection, the perusal of which we would strongly recommend to our readers. From the number of causes which remotely tend to produce paralysis of the levator palpebræ, either alone or in connexion with other and

(*a*) *Gazette Medicale*, Feb. 28, 1846.
(*b*) Examples of Ptosis, with illustrated Remarks, by J. F. France.

more general paralytic affections, and of which Mr. France's cases afford us good examples, it would not be possible to compress within our limited space a sufficient account of the information contained within this paper, unless indeed we entered into a complete history of this disease: and, without quoting the cases themselves, we find it difficult to arrange the author's observations. The majority of the cases may be divided between those of debility and repletion, and were dependent upon affections commencing within the cranium, either general or circumscribed to the vicinity of the third pair of nerves. The greater liability of the motor oculi to paralysis than other nerves of the orbit is already well known, and, as the author observes, "the dyplopia of supervening inebriety is an exemplification of it. The third nerve here exhibits its aptitude (if I may use the expression) for paralysis, by being the first to discover impairment of function, whence, early in his intemperance, the individual 'qui studet calicibus epotandis' perceives this apparent duplication of objects, the mere result of his inability to converge the optic axis properly upon them." Ptosis is frequently attributable to cold or some rheumatic affection; but its greater liability to disease must, the author apprehends, be "ascribed to some constant predisposing condition of the nerve (one existing therefore in a state of health), brought into action as an element of disturbance when a morbid tendency has arisen;" and this predisposing cause he endeavours to account for by the intra-cranial anatomical relations of this nerve in its circuitous course, and the "dangerous allies" with which it is associated. During the last year Mr. France translated and published in the London Medical Gazette the valuable Essay of Professor Valentin on the "Functions of the Nerves of the Orbit;" in which paper the subject is treated in a most masterly and scientific manner. Valentin considers the superior division of the third to be a voluntary nerve, and believes that the inferior division presides over involuntary action; and in his theory his translator appears to agree. Another claimant for honour in the anatomical discussion of this subject has appeared in the person of Mr. Lonsdale, but in which discussion we cannot interfere. We refer our readers, however, to his paper on this subject in the Medical Gazette for the 27th of March last. Mr. France's cases of ptosis were treated by local depletion, mercury, and tonics, according to the most approved and general rules acknowledged by the profession in such matters. We have only to acknowledge that we do not think he made use of counter-irritation to a sufficient extent. In addition to the internal treatment suited to the case, and which is in every instance indispensable, we have employed with decided advantage the repeated application of blisters above the brow and in the neighbourhood of the temple; and likewise applied with manifestly good results stimulants, such as the solid nitrate of silver, to the skin of the paralysed lid. In a case of paralysis of the entire face (to be hereafter detailed) of many years' standing, in which the patient had been latterly unable to follow his usual occupation by the lid falling be-

low the level of the lower margin of the pupil, we succeeded by the continued application of strong tincture of iodine, lunar caustic, and nitric acid, in causing such a contraction of the skin as enabled the patient (probably in part through the action of the occipito-frontalis muscle) to elevate it above the level of the superior margin of the pupil.

In one instance Mr. France adopted Mr. Hunt's operation of removing an elliptical portion of the skin. We use the expression, "Hunt's operation" here, more because a certain idea is associated with it than from any peculiarity in his method, beyond that recommended and practised by the early fathers of surgery, who, it would appear, almost invariably, if their "nervous and cardiac medicines should all miscarry," used "to extirpate a sufficient quantity of the relaxed cutis, and after healing up the wound, the remainder may become sufficiently shortened."(*a*) We learn from the writings of the ancient authors that cures resulted from this mode of procedure, although they knew not that the occipito-frontalis muscle was the immediate agent in causing the elevation of the lid. Mr. Hunt, however, was, we believe, the first to explain its mode of action, and also to recommend the superior incision to be made immediately below the brow; but we cannot say exactly how high or how low the older oculists, Bartischius, Rau, and others (who invented instruments for the purpose), made their incisions. Mr. France's case was successful.

AFFECTIONS OF THE CONJUNCTIVA, CORNEA, AND SCLEROTIC.

Photophobia.—Dr. Duval, of Argentan, in a memoir addressed to the Editor of the *Annales d'Oculistique*(*b*), after describing at length the phenomena of this remarkable symptom in ophthalmic diseases, and having carefully examined the nerves engaged in the motion and sensation of the eye, comes to the conclusion that photophobia, and the pain which constantly accompanies it, is only a morbid affection of the ophthalmic branch of the fifth pair of nerves, and that this symptom of intolerance of light always exists in every form of ophthalmia, as soon as the inflammation becomes intense enough to engage or interest one of the numerous ramifications of that nervous filament. His inquiry first extends to the vascular system; but, as he says, with great truth, redness does not always accompany photophobia; then it follows that this symptom is not necessarily the result of any alteration in either the venous or arterial vessels. The lymphatics are insensible, and as pain is always present in photophobia, he concludes that the lymphatic vessels cannot be the immediate seat of photophobia. The nervous system remains then to explain the cause of this very distressing symptom; but as the nerves which are engaged either di-

(*a*) Heister's Surgery, vol. i. p. 390, 7th edit. 1763. See also all the old works on ophthalmic surgery, particularly Wenzel's Manuel.

(*b*) Number for July, 1846.

rectly in, or subservient to, the junction of vision are so numerous, the solution of the question requires to be narrowed within a still smaller compass. The optic nerve and retina have been proved by experiment to be perfectly insensible; the motor oculi presides over the motions of the organ; those small branches of the great sympathetic, which are found around the eye, are not likely to produce this effect; and it is to the numerous sub-divisions and branches of the fifth, which gives to the vital vessels the necessary impulse for performing the functions of nutrition and secretion, that photophobia is to be attributed. To this it may be added, that touching any filament of this nerve causes the most excruciating pain.

This theory of Duval's is perhaps the true one, but it is not original. Dr. Mackenzie, in the last edition of his work on the eye, says that the extreme intolerance of light, spasmodic contraction of the lids and epiphora, is explained by the anatomical fact, "that the lachrymal nerve, after supplying the lachrymal gland, goes to the conjunctiva and orbicularis palpebrarum, and may tend to establish a strong nervous sympathy between these parts." Mr. Lawrence believes that photophobia is the result of "a disordered sensibility of the retina, dependent on the state of the alimentary canal;" but this theory wants proof.

Among the causes of photophobia enumerated by Duval are included bandages applied too tightly over the eyes; this, however, is a cause that, in this country at least, seldom occurs. Poultices, and collyria especially, when employed in ophthalmia depending on constitutional derangement, and the patient having been kept in the dark for any length of time, are also mentioned by this author; but every practical oculist is well aware that this symptom will arise, particularly in cases of what are termed strumous ophthalmia, where none of these causes have acted. The system of keeping the eyes closely covered up, and retaining the patient for months together in a darkened apartment, which was formerly employed in this country, but now happily abolished, no doubt contributed in a great degree to keep up, if not absolutely cause, this great insensibility to light.

Having enumerated the various remedies usually employed to mitigate or arrest photophobia, such as opium, belladonna, camphor, nitrate of silver, &c., &c., in spite of each or all of which the disease, as we all know, often proves rebellious, M. Duval recommends our having recourse to excision of the conjunctiva. To effect this the lids are separated by means of elevators, and then, with a pair of curved, flat scissars, the conjunctiva is excised all round the cornea, near the junction of that membrane with the sclerotic. This is a practice of which we have had no experience, but which we should be loath either to recommend to others or to adopt ourselves. For children especially, we have found the application of the solid lunar caustic, drawn gently two or three times across the lids, so as just

(*a*) Mackenzie on the Eye, p. 416.

to blacken the surface, as recommended by the late Mr. Hocken, to be exceedingly useful in many cases of photophobia. It is not a panacea, as some suppose; yet we have found it highly serviceable, not only in cases of photophobia, but in cases of conjunctivitis, particularly in young children, in many of which it produces the most marvellously rapid effects. We suppose it acts as a counter-irritant; it produces little effect, either in pustular ophthalmia or in inflammation of those textures deeper in the eye than the conjunctiva. In cases of blepharospasmus, we have found the vapour of strong prussic acid particularly useful; but this is the only disease in which we ever saw the slightest beneficial effect produced by it, and we gave it a long and a fair trial.

Serous Cysts.—Dr. Sichel, the distinguished Parisian oculist, has written an extensive memoir(*a*) on those serous cysts, which occur either in or under the conjunctiva of the globe or lids. The hydatid form are diaphonous, elastic, of a pale red colour, small in size, elliptical or oval in shape, and are generally found beneath the great palpebro-ocular fold of the conjunctiva. They produce no pain or inconvenience, except that caused by their size in the advanced stage. The only tumour they are likely to be mistaken for is that formed by the cystecircus of the subconjunctival cellular tissue. Under the head of serous tumours, he enumerates those which follow wounds of the sclerotic, which have but incompletely cicatrized, and are formed by a small fistulous opening remaining in the site of the injury, while the conjunctiva has healed over it. In this case, the tumour is formed by aqueous fluid from the interior of the globe. Dr. Sichel has minutely examined these small hydatid vessels, and states that they consist of a pseudo-fibrous membrane, containing fluid, and intersected with numerous fine primitive fibres intersecting each other in every direction, and that they do not in any instance contain the echinococcus, as was believed some time ago. When small, these tumours are best removed with a curved scissars, as one is anxious to extirpate them entire in order to insure success, and also for the purpose of examination. Dr. William Soemmering has, however, recorded a case (in the same memoir) of a young girl at Frankfort, who had one of those subconjunctival hydatid cysts immediately below the inferior border of the cornea; it was sixteen millimetres in length, seven in height, and six in breadth. Upon removal it presented a hardness almost cartilaginous, but on the sac being opened, it immediately softened, and was found to contain several echinococci, but no specimen of the cystecircus. Small serous cysts upon the external margin of the palpebral edges, are too well known to require description.

Gonorrhœal Ophthalmia.—Dr. Hairion, of Louvain, has lately investigated this subject with remarkable industry, and written several papers on it in the *Annales d'Oculistique*, during the past year, which, with some additional matter, have recently been pub-

(*a*) *Archives Generales de Medecine*, Aug. 1846.

lished in a separate work(*a*). He holds the opinion, that gonorrhœa and chancre are identical, and that one as well as the other may be followed by constitutional symptoms; and he divides this form of inflammation of the eye into "syphilitic gonorrhœal ophthalmia" and "gonorrhœal ophthalmia not syphilitic." The first of these is in its nature identical with true gonorrhœa, and is invariably caused by the direct application of the virus to the conjunctiva. In addition to those symptoms of violent inflammation and profuse discharge, which are well known to characterize this specific disease, the Louvain professor states that he has discovered an invariably attendant symptom, which, if it should prove correct, must be of great value in enabling the surgeon to diagnose the true gonorrhœal ophthalmia, the result of contact. It is the constant presence of a small round or oval tumour under the skin, painful on pressure, situated in front of the ear on the affected side, from the enlargement of a lymphatic ganglion. The author says he discovered this about three years ago, in a patient whose conjunctiva was inoculated with gonorrhœal matter with the hope of removing pannus(*b*). That he has since observed it in nine cases where there was no doubt as to the nature of the infection; while it was absent in some hundred cases of purulent ophthalmia not syphilitic or gonorrhœal, which he had an opportunity of observing. To this enlargement he has given the name of "*bubon-pre-auriculaire;*" the absence of this peculiar symptom constitutes the second or non-syphilitic form of gonorrhœal ophthalmia. His paper contains a number of propositions on this subject. In his opinion, true gonorrhœal ophthalmia can only be produced by actual contact with the matter of syphilitic gonorrhœa; and he believes that that form of gonorrhœal ophthalmia which may be produced by sympathy or metastasis, has no essential character to distinguish it from other blennorrhœal ophthalmia. These propositions are repetitions of the foregoing observations, but arranged with that hair-splitting minuteness which characterizes many of the continental writers, especially on ophthalmic diseases. We think gonorrhœal ophthalmia sometimes occurs from sympathy, in which case it can be distinguished from the form induced by contact by the less intensity of the inflammation, by its appearing on the same day as the running from the urether, and by its affecting both eyes simultaneously. Two cases have been recorded of production of this disease by miasma, but the author very justly observes, that more facts are required to support this theory, which every day's observation appears to corroborate. On the other hand, Dr. Cunier, in reviewing the work from which we have quoted these remarks, states his belief in the operation of "miasma," where a large number of patients affected with gonorrhœa are crowded into a small

(*a*) *De l' Ophthalmie Gonorrhoïque.* Par Frederic Hairion. Lonvain. de Imprimerie de P. J. Peeters. 1846.

(*b*) We believe we were the first in this country to notice this mode of treating pannus by inoculation. See Austria, its Literary, Scientific, and Medical Institutions. Dublin, 1843, p. 251.

space. Ricord, however, denies its possibility, and the authorities and cases cited by the reviewer by no means strengthen his case, while they rather serve to prove that the disease is propagated by direct contact(*a*). In a late number of his journal, Dr. Cunier states, that since the publication of Dr. Hairion's observations, he has paid particular attention to the subject of the pre-auricular bubo, and that, although he has observed it in all cases of gonorrhœal ophthalmia, he has likewise seen it in several cases of severe ophthalmia of a scrofulous character, where there was no evidence of syphilitic infection(*b*).

Ophthalmia Neonatorum.—Dr. Eschrish states, that in the ophthalmia of new-born infants, he has always affected a perfect cure in a shorter time than usual (one week), by surrounding the eye or eyes with a thick layer of mercurial ointment. We should be sorry to trust a severe case of this disease to this remedy, and the Munich physician acknowledges in his paper that, in addition to the mercurial inunction, he uses frequent injections of tepid water, and when the swelling and discharge have lessened, he employs a weak caustic solution(*c*). Prof. Von Ammon recommends a lotion of six grains of extract of belladonna and ten drops of lime water to four ounces of distilled water; with these the eyes are to be steeped every half hour; and in the interim a bandage, wet with the solution, is to be applied over the eyes. His object in using the belladonna is to allay the spasm of the eye-lids, and by facilitating the matter to allay the swelling of the conjunctiva and cornea. This certainly is not heroic practice, and few practitioners in this country would trust a patient to it alone. Having constantly remarked an extensive state of ulceration in the conjunctiva of the upper lid, in the severe forms of this disease, I now generally evert the lid to examine its inner surface as soon as a case presents itself; and we have several times succeeded in cutting short the disease by at once applying a strong solution of nitrate of silver to this part alone. We beg to call the attention of ophthalmic surgeons to this subject.

Opacities of the Cornea.—Scarcely a month passes that we do not read of the wonderful cures effected in cases of specks, feathers, nebulæ, clouds, opacities, pearls, leucomas, albugos, cicatrices, and even staphylomas of the cornea, by specifics of various kinds, from prussic acid to mesmerism; but, from the days of Tobit to Turnbull the same silence or ignorance in describing the positive pathological condition of the cornea has prevailed. Some of the cases of corneal opacity may be removed simply by time and the improvement of the general health, whilst others never can be obliterated; the difference consisting in the original cause, the precise seat of the opacity, and the existence or non-existence of synchia anterior, or attachment of the iris to the cornea, in which case, no matter how

(*a*) *Annales d'Oculistique.* Sept. 1846, p. 116.

(*b*) *Annales d'Oculistique*, for Nov. 1846. See also Mr. Close's observations in the Medical Times for 16th May, 1846.

(*c*) *Medicinische Correspondens Blatt; Bairischer*, for August.

small the opacity, it never is removed; while, where it does not exist, the cornea may clear either by the efforts of nature or by the influence of remedies, notwithstanding that the opacity may extend over its entire surface. There are, however, cases of very slight opacity indeed, which never are removed, and therefore, it behoves the ophthalmic surgeon to be thoroughly acquainted with all these circumstances, in order to form an accurate prognosis, and to be able to state to patients, or their friends, what may be the final result of such cases.

One of the most philosophical papers which we have read upon this subject, is that of Szokalski, published in the *Archieves fur Physiologische Heilkunde*(*a*). He has examined, pathologically, and with great minuteness, the various laminæ of the cornea, and draws the following conclusions:—In the cloudy opacities the epithileal cellules are more compact and more adherent to the cornea; that total staphyloma corneæ is principally produced by an abnormal development of the epithelial cells; and that adherence of the iris to the cornea is not an essential pathological feature of this peculiar state. Cerosis of the conjunctiva is an alteration of the epithelium analogous to pityriasis, and the red points sometimes observed in an inflamed cornea do not precede the development of the vessels, as some authors have believed. Inflammation of the parenchyma of the cornea causes this peculiar appearance of red points, while that of the conjunctiva gives rise to the development of phlyctenulæ, the fluid in which sometimes contains globules altered by inflammation. In these cases of phlyctenulæ, Szolaski recommends the evacuation of the fluid with a cataract needle, for if the fibrous deposit contained in them be allowed to remain, the suppuration which follows will obscure the cornea. Pannus consists in a hypertrophy of the vessels and degeneration of the epithelium. Ptyregum is formed by the hypertrophy of the submucous tissue covering the sclerotic, and by the development of the cellular tissue between the substance of the cornea and its epithelium. Obscurity and ulceration of the cornea, following the section of the fifth pair of nerves, the author does not believe to be the result of true inflammation, for in such cases he never could discover either inflammatory globules or pus. When inflammation attacks the cornea it presents the same characters as when developed in other tissues, consisting of accumulation of blood in the vessels, granular exudation, inflammatory globules, and pus. When the granular exudation instead of changing into pus, becomes organized into filaments; it closely unites the laminæ of the cornea, which thus lose their transparency, and thus form that species of opacity termed leucoma. He does not believe that the membrane of aqueous humour(*b*) extends over the anterior face of the iris, and states that aquo capsulitis is merely a simultaneous inflammation of the iris and posterior

(*a*) See *Gazette Medicale de Paris*, No. xliv.

(*b*) On the Continent this is generally styled the membrane of Descemet or the membrane of Dumours.

face of the cornea, because the same vessels and nerves are common to these two parts. The internal face of the cornea is covered by a layer of epithelium, the detached scales of which, when they float in the aqueous fluid, Donné considers to be the cause of muscæ volitantes. The elastic cornea of Demour is never altered: it is destroyed when abscess of the cornea has penetrated to the interior. Although we cannot quite agree with the anatomical opinion advanced by Szokalski, that the membrane of Demour does not cover the face of the iris, yet we have often been at a loss to account for the circumstance of the great opacity of portions of this membrane in cases of cornitis, and in cases of intense inflammation of itself originally, while in the most advanced forms of both these the iris remained quite unaffected, and perfectly brilliant in colour. On the other hand, one of the earliest and most remarkable symptoms in some forms of iritis is inflammation and opacity of this membrane, and here we must suppose it has spread by continuity of surface from that covering of the iris.

Fungous Growth produced by a Wound of the Cornea.—Dr. Giberto Scotti, oculist in the University of Pavia, has recorded an account in the Milan Gazette, of an injury of this nature, which occurred in a girl about four years of age, from a sharp-pointed instrument penetrating the globe of the left eye. Upon examination the iris was found only partially dilated, and the pupil normal. The eye was suffused with tears; on the upper and outer portion of the cornea was observed a round speck about a line in diameter, which gave to the form of the eye a very strange appearance. This speck was opaque and of a greyish-white hue; the pain over this spot was trifling, even when pressed upon by the finger; it was at first suspected to be a foreign body, and, therefore, tried to be detached by a Beer's spatula; it was then, however, discovered to be an adventitious growth from the wound in the cornea; it was elastic, and found to adhere only by its central portion, as its brim or margin was capable of being elevated all round from the surface on which it lay. "I saw immediately," says the relator, "that it was a lesion of the cornea, which, having been softened by the blow, had grown up into a fungous excrescence, flattened by the habitual pressure of the eye-lid upon it." It was touched with the solid nitrate of silver, and belladonna stupes applied to the eye: this mode of treatment, persevered in for four or five days, completely removed the disease, leaving a very slight opacity in the cicatrix of the wound(*a*).

Egyptian Ophthalmia.—An outbreak of this disease occurred in an epidemic form among the Austrian soldiers in the garrison at Mayence, in which, during a single week, a thousand men were attacked(*b*). The disease occurred in the autumn of the year 1845, and the soldiers were then in camp on a portion of very sandy ground in the vicinity of the town, and the heat was so intense that the men

(*a*) *Gazetta Medica de Milano*, tom. v. no. 1.

(*b*) *Zeitschrift für die Gesammte Medecin.*—*Gazette Medicale*; and Medical Times for 15th August.

undressed every night. The disease was characterized, in addition to the ordinary inflammation of the conjunctiva, by a number of phlyctenæ, or vesicles, which appeared on the inner surface of the lower eye-lid, towards the external angle, and which generally spread over the entire palpebral conjunctiva: there was but little external redness of the lids, but a granular condition of the palpebral conjunctiva generally followed. This epidemic yielded to the liberal use of caustic; and but few cases of great severity occurred in it. It will be remembered that a severe epidemic ophthalmia occurred among the Prussian troops at Mayence in 1818.

Staphyloma.—In cases of conical staphyloma engaging the cornea alone, and where the white, horny mass protruded so far as to produce a remarkable deformity, and by projecting between the lids, to cause such an uneasiness as to demand surgical interference, we have lately performed the following operation with the view of obviating the escape of the humours, the suppurative inflammation, and consequent collapse of the globe which so frequently follows the ordinary mode of proceeding.

Having fixed the lids as in the operation for extraction, we transfix the most conical portion of the cornea with a fine hook, and then pass a small, curved sewing needle, armed with a fine ligature, through its substance from below upwards, and, passing it through the anterior chamber, bring it out through the cornea above, within about a line from its sclerotic margin. We then pass a cataract knife across the cornea as in making the lower section for extraction, taking care not to cut out the needle, and with a curved scissors remove the flap, as is usually done in the ordinary operation. Making sure that we have removed a sufficient quantity of the projecting diseased mass, we draw the needle and ligature through, and, by knotting the latter, bring the edges together, as in any other simple incised wound; and in two out of the three instances in which we have tried this plan of treatment it was perfectly successful, the edges of the cornea adhering, and the eye subsequently presenting a simple leucoma, instead of the previous staphyloma. One of these cases was operated upon twelve months ago, and there has been no return of the projection since. Considerable difficulty will be experienced in passing the needle through the thickened cornea, which in some cases is as hard as cartilage.

In cases of more general staphyloma, where the sclerotic and choroid are also engaged in the projection, we have succeeded in reducing the size of the globe within the ordinary dimensions by the following means. With a large, flat, spear-shaped needle, we pierce the cornea, and giving the instrument a half turn, so as to enlarge the aperture, permit as much of the fluid contained within, to escape, as will reduce the globe to the normal size; the lids are then closed, and a pledget of lint applied upon them as tight as the patient can comfortably bear. This we repeat every second or third day, each time reapplying the pad, until we find that the eye does not continue to increase in bulk after the operation. It will generally

require to be repeated six or eight times, sometimes oftener; but we have frequently succeeded in permanently reducing the deformity by this means, at the same time that the figure of the globe is preserved. We never saw inflammation follow the tapping but once, and that was in a very unruly, irritable, scrofulous subject. A growing staphyloma, such as that which follows upon extensive ulceration of the cornea with prolapsed iris, may, after the inflammatory stage has subsided, be arrested by tapping it, and applying moderate pressure. In the same manner, where the conjunctiva of the cornea and a large portion of the laminated cornea had ulcerated, but were still tolerably transparent, and that the remaining layers of the cornea bulged forward in such a manner as to threaten to give way hourly, we have succeeded in preventing this unhappy accident, and restoring the cornea unblemished to its natural condition, by keeping up continued moderate pressure upon the lid for some days, at the same time that the ulcer was touched with a sol. nit. argenti; while other means were taken to lessen the inflammation and to promote a healthy condition of the diseased parts. In cases of hydrophthalmia and staphyloma, where the aqueous fluid is evacuated, it will be found to have acquired a remarkably saltish taste, probably from some increase in the quantity of muriate of soda which it contains.

By one of the last numbers of the Milan Gazette we perceive that Professor Quadri has in his operations for staphyloma also endeavoured to attain the object which we have had in view, namely, that of preserving the lens and humours, and preventing the collapse of the globe; but his operation differs in no wise from that usually performed, except in immediately closing the lids and endeavouring to promote adhesion of the cornea, without suppuration. By the introduction of the needle we fix the globe; to a certain degree present a barrier to the sudden evacuation of the lens or humours; and perhaps hold back the iris in its place, if it is not engaged in the staphyloma; and, by drawing the ligatures immediately together, not only prevent the possibility of the globe collapsing, but place the cornea in the best possible condition for adhesion.

Ophthalmic Statistics.—Although we are no advocates for the statistical method of treating disease, yet the proportions which certain diseases bear to the great mass of a population; their numerical comparison with all other diseases; the record of the ages, sexes, and localities where they occur; the seasons of the year in which they prevail; the influence which climate, variations of temperature, elevation, soil, occupation, and habits of life, &c., exercise in such cases; and, when such diseases prove fatal, their mortality in proportion to all other diseases, and to the population at large; the effect, moreover, of late or early treatment; the influence of density or paucity of population in certain towns and districts, and the proportion of medical relief, &c., are all subjects of great vital importance, and deserving the strictest attention both of the practical physician and the state. In some diseases statistical tables are of more value than others;

where they can be correctly obtained and accurately registered, the information which they afford is of very great value in enabling the compiler or arranger of special works upon the subject to state with a certain degree of accuracy, at what age, in what sex, in what country, and at what period of the year, &c., such or such diseases most frequently prevail. Having been ourselves extensively engaged in drawing up statistical records, we have studied somewhat in this school; and we have, moreover, learned to receive with caution statistical information unless where we have a knowledge of the means by which it was obtained.

Three years ago we commenced to register ophthalmic affections, according to the simplest method that we could devise; and while tables, containing the result of our observations, are published from year to year(*a*), we do not think fit to generalize till the number of our observations shall amount to many thousands. In order, moreover, to make proper statistical reports on ophthalmic diseases, it would be necessary to attach to them explanatory observations upon the ideas which the author attaches to certain expressions, as the nomenclature and classification of ophthalmic diseases is neither perfect nor universal: we would, however, suggest the employment of statistical registries to those gentlemen who have the management of large public institutions.

Dr. Cunier, of Brussels, has worked this subject with great industry for some time past, and published a series of researches upon the ophthalmic diseases of the province of Brabant in his valuable periodical, the *Annales d'Oculistique*, from which we extract the following general conclusions(*b*). In Belgium and Holland, the poor and working class object to employ any treatment in the commencement of an ophthalmia, from a prejudice which we ourselves have often witnessed in the Orient, and which the inhabitants of Belgium very likely received, through the Spaniards, from the Moors,—that it is unlucky to interfere with a sore eye. Thus we have seen persons in Egypt and Syria with quantities of dust and collections of flies and other insects in the corners of the eyes, in cases of ophthalmia, from a belief that ordinary cleansing was injurious. Hence comes the old Spanish proverb, "El mal del ojo. Curarse con ol codo,"—"sore eyes are to be cured by the elbow." There are Arab, Dutch, and Flemish proverbs to the like effect. In Brabant scrofulous ophthalmia is very common, and next in frequency occurs the rheumatic, to which women are more subject than men before puberty, but after that period the sexes are equal, and the affection is generally from twelve to sixteen per cent. of all ophthalmic discases. Both rheumatic and catarrhal ophthalmia, which prevails very much in the low countries, is attributed to atmospheric influences,

(*a*) See Annual Reports of St. Mark's Ophthalmic Hospital, and Diseases of the Eye and Ear.

(*b*) *Rapport adressé a M. Liedts, Gouverneur du Brabant, Président de la Chambre des Representants*, &c. &c., published in the Numbers of the *Annales* for the year 1846.

the frequent changes of temperature, cold and damp, and to the ill construction and bad ventilation of the workhouses, manufactories, and schools, &c., where large masses of the younger portion of the population are crowded. Affections of the choroid are common, and women much more subject to them than men; and in most of these latter the disease appears to be connected with affections of the uterus, bowels, or the glandular system. During the five years over which Dr. Cunier's observations extend, cataract was observed, along with choroiditis, in 105 out of 343 cases; and ninety-two of glaucoma occurred, eight of which supervened on the operation by couching. Glaucoma, had, however, be better specified, in a report of this nature, as slow internal inflammation of the eye, commencing with loss of vision, accompanied by change of colour in the iris, which almost invariably turns green, and the pupil acquiring a dull muddy hue, at the same time that the choroid is in all probability greatly congested, if not inflamed. As the disease proceeds, the iris bulges forward, the lens becomes opaque, and in time the eye softens, with or without staphyloma of the choroid. Dr. Cunier states, with great truth, that the persons most subject to those peculiar alterations in the organs of sight, and to choroiditis, are those who follow a sedentary occupation, employ their eyes at fine work, with the body bent, who inhabit cold, damp rooms, and who work a great deal with light derived from a small candle, but magnified by passing through a globe of water—a common practice all through the Continent. In eighteen out of sixty-four cases of gonorrhœal ophthalmia, arthritis also existed, but was confined to the knees and tempero-maxillary articulations, as originally remarked by Swediaur. It is remarkable that the disease was sometimes produced by the patients washing their eyes with their urine, a fact which we remember hearing Dr. Wilmot mention many years ago, in his lectures at the College of Surgeons, as producing this disease in Ireland. Only thirty-six cases of syphilitic iritis are mentioned, a remarkably small proportion indeed, but instancing the less frequency and less severity of secondary symptoms on the Continent than with us. In this country it is more frequent in males; in Belgium the great majority of cases occurred in females. Cunier never met with, nor have we ourselves ever seen, iritis caused by mercury. In Belgium most of the cases of iritis had been treated in the primary instance without mercury. Out of 2607 cases of ophthalmic diseases noted in our registry of the last two years, there were eighteen cases of undoubted syphilitic iritis, fourteen males and four females.

Entozoa in the Eye.—Instances of parasitic animals in the membranes or chambers of the human eye are constantly recorded in the Journals, and at page 237 we mentioned cases of their occurrence in tumours of the conjunctiva. Signor Carrera has communicated to the *Boletin de Medicina* of Madrid the case of a man, who, having slept in the open air, was next day attacked with severe pain in the left eye, which rendered him unfit to follow his usual occupation,

while, to all appearance, the organ was perfectly healthy. Upon a careful examination a small red spot was discovered on the sclerotic, towards the internal canthus, and by friction of the upper eye-lid a number of small white worms were observed to come down over the cornea, and others were in a short time seen to traverse the globe in all directions. A stimulating collyrium was dropped into the eye, and nearly forty of these animals were extracted. They were about the diameter of a hair in thickness, and about half a line long; were white in colour, with a minute black point on the head. There is, however, a manifest looseness of description in the article, as well as a great want of entomological knowledge. Signor Alessi has related a case in which an entozoon, in shape like a worm, and about two lines and a half long, and of a dirty white colour, was seen swimming in the anterior chamber, but the same want of definite information with regard to the precise nature of the animal occurs here as in the former case. The patient laboured under ophthalmia, chiefly affecting the cornea, so that the case had previously been treated for keratitis. The treatment consisted in the use of mercury by the endermic method, viz., the repeated application of small blisters around the orbit, which were dressed with calomel, by which it is reported that the inflammation soon disappeared, and the animal, which had lain for some time motionless in the anterior chamber, was absorbed.

Turpentine Collyria.—M. Laugièr has lately made use of this application in several cases at the Hospital Beaujon. His experiments were made upon cases of conjunctivitis, both acute and chronic tylosis, dacryosistis or inflammation of the lachrymal sac, and also sclerotitis, all of which had been (we will not say correctly) already treated with a collyrium of nitrate of silver, and, consequently, appeared to the author to be the most appropriate for judging of the comparative effects of the two remedies. The formula which he gives is as follows: To twenty grains of Venice turpentine, heated in an earthenware mortar, add, when sufficiently fluid, twenty drops of the essence of turpentine, and triturate: three or four drops of this to be dropped between the eye-lids night and morning. Its action was most beneficial, and seemed preferable to that of the nitrate of silver, employed in the strength of fifteen centigrammes in thirty grammes of distilled water. M. Laugièr afterwards tried it with a number of extern patients attending the hospital and affected with acute disease of the conjunctiva and cornea, who had not been submitted to any previous treatment, and their cures were sufficiently numerous and rapid to testify to its harmlessness and efficacy. The proposer of this remedy suggests the propriety of employing the turpentine in the form of an ointment, by mixing it with some fatty substance. He has used the pure oil of turpentine; it, however, increased the pain exceedingly; he therefore recommends its administration in the formula already given(*a*).

(*a*) *Gazette des Hopitaux*, July 14, 1846.

We have made some trials with this remedy, particularly in cases of chronic ophthalmia, and can safely say it does no harm. Prepared according to the formula of M. Laugiér, it very soon congeals, and requires to be heated before using.

We beg to refer our readers to our observations on the use of Atropine and Belladonna, contained in our last Number.

Myopia, Presbyopia, and Asthenopia.—Although the subjects of near sight, aged sight, and impaired vision, or those abnormal conditions which occasionally take place in the refracting media of the eye, and described under the above heads, have been treated at some length in the various systems of ophthalmic medicine, there is still a great deal to be learned upon the subject, particularly by the general surgeon, the optician, and even the public, although we would not in general include this latter class among those to be instructed on professional subjects. It is evident that as countries have increased in civilization, wealth, manufacture, and literature, so has the necessity for the use of glasses increased. If this observation be correct it tends to strengthen the opinion which we expressed in the first part of this Report, that myopia and presbyopia, &c., are acquired imperfections, the result, in many instances, of the peculiar habits of the individual, while at the same time there is sufficient evidence to shew that myopia is often an hereditary peculiarity. We here exclude those forms of short-sightedness produced by manifest disease, such as cornea conica and cornea globosa, dropsy of the aqueous chamber, or other conditions, the result of inflammatory actions going forward in the eye. How the ancients managed without spectacles, if the affections requiring such were as common in their days as in our's, it is difficult to conceive. The merit of the discovery of spectacles has been disputed, and the invention has been claimed for Roger Bacon, Alexander Spina, Salvino Armati, and Maurolicus. To the Oxford friar, however, the claim is generally ceded. F. Eugene de Caesemaeker, an optician at Ghent, has lately written a tract(*a*) on the use of glasses, in which he appears to have settled the point in favour of Bacon, of whom he has given some interesting biographical notices. The birth-place of the Franciscan is generally believed in England to be Ilchester, but Caesemaecker appears to have proved that it was Anzin, the ancient French Hainault, and that, consequently, this distinguished man was a Walloon. The Flemings claim the discovery, however, for several others, but particularly Nicolas Bullet and Oliver Hemelveerdegem.

Generally speaking, the employment of glasses, and the choice of the particular form of glass, is left to the public and the optician; they are subjects on which the former think they are quite sufficiently instructed to judge, and the latter, for arguments to which human nature generally gives way, see no reason to undeceive them. At

(*a*) *Aenteekening van verschillige merkwaerdigheden over de Brillen en verderen Zienglazen, en over de Oogziekten in-en omstreeks de stad Gent.* 1845. 8vo. pp. 36. See also notice of it in the September Number of the *Annales d'Oculistique*, 1846.

the present time this is a subject of very great importance, and demanding a much more lengthened notice of it than a report of this nature could afford; we purpose, however, ere long, to draw the attention of our readers to it in a more prominent manner. In those days of forced education on the one hand, when unhappy children are compelled, both by parents and teachers, to pore over books, often of very small type, and other objects requiring accurate vision, for hours and hours together, with the head bent, the shoulders stooped, the abdomen compressed, and the legs often dangling in the air, in crowded, badly illuminated, and ill ventilated apartments;—when young ladies in the upper circles, and those girls in the middle ranks who are preparing to be governesses and teachers, are obliged to "practise" and *read* music for five and six hours a day;—when young gentlemen are induced, either by threats or emulation, to read for eight and ten hours a day, and in addition several hours of the night, under the glare of a strong gas light, in order to uphold the character of a school or master, at the risk—often at the expense of sight and life;—when, on the other hand, unfortunate tradesmen are compelled by low wages, the high price of provisions, and scarcity of work, to support their almost starving families by working in dark, damp cellars and garrets for fourteen or sixteen hours a day;—and when poor seamstresses and milliners are necessitated by the fashionable luxuries of the upper classes to work for no less than eighteen hours out of the twenty-four;—and when we add to this the various factories and private trades which require the continuous application of the eye to minute objects, we wonder not that near-sightedness and impaired or altered vision should be now so common amongst us(*a*). There are certain questions connected with these states of impaired vision on which opinions are divided; but there are others, particularly with regard to the early employment of glasses, and the endeavour, if possible, by general treatment, and regulation of the health and occupation, on which there is no diversity, and with which patients, parents, teachers, and guardians, should be acquainted.

Dr. Sichel, of Paris, has for some time past examined into this subject with great energy and ability, and devoted a public lecture, once a week, to the consideration of the various states of impaired vision, the pathological changes which take place in such, and the proper description of glass applicable to each. The substance of these lectures has been given in Dr. Cunier's Journal in the early part of last year(*b*); as they have not yet been completed, we can only here refer to them; those that have already been published contain the most philosophical view of the matter which we have yet read.

In 1840 a very interesting tract was published, at Goettingen, by Professor Arnold Berthold, on the cure of short sight, by means of an

(*a*) See our remarks on the subject in the Lancet for April, 1845.

(*b*) *Leçons cliniques sur les Lunettes et les etats pathologiques consécutifs a leur usage irrationnel.*

apparatus which he denominated a Myopodiorthoticon, being a desk so arranged and capable of being so adjusted that the myop, by gradually and steadily increasing the focal distance, so alters or educates the sight that, in a short time, it becomes so much lengthened as to enable the individual to read at the ordinary distance(*a*). The fact of certain trades and occupations producing myopia is already well known, and the following fact tends to prove, that as this peculiarity has been acquired, so may it be lost under particular circumstances. During the days of press-gangs, tradesmen of every description, many of whom were short-sighted, were compelled to enter the navy, and, at the end of eighteen months or two years, from the alteration of occupation, and from constantly exercising the eye on distant objects, the great majority of those who had had impaired sight, acquired normal vision.

The latest, and indeed the only modern work in English, has just appeared from the pen of Mr. W. W. Cooper(*b*); it is written in a clear and rather popular style, and fully achieves the object for which it was intended, that of "imparting information upon points concerning which all medical men are expected to be well informed, and which are by no means devoid of interest to the general reader." In cases of myopia, the result of over application of the eyes, he very justly states that spectacles are absolutely injurious: "They afford, it is true, the means of discerning distant objects, but they tend to confirm the disorder, and render the individual dependent upon artificial aid for the remainder of his life. The course which ought to be pursued is plain; the patient should abstain from study, and all pursuits requiring close application, and he should endeavour, by due and well-regulated exercise of the eyes, in the country if possible, to recover that adjusting-power of which, by injudicious exertion, he has deprived them." We recommend Mr. Cooper's little work to our readers, and would particularly direct their attention to the chapter on the use of glasses, and on the effects of artificial light. We are glad to perceive, that the subjects contained within the heading of this notice are beginning to receive the attention they deserve; and rejoice to find our able cotemporary, the Medico-Chirurgical Review, has already occupied its pages with them. When Dr. Sichel's lectures have been completed, we shall again take up this subject. In the meantime, we would refer our readers to consult, in addition to those works enumerated in the foregoing observations, Dr. Mackenzie's book on the Philosophy of Vision, and his admirable tract on "Asthenopia or Weak-sightedness," published in the Edinburgh Medical and Surgical Journal, in 1843.

(*a*) *Das Myopodiorthoticon oder der Apparat die Kurzsichtigkeit zu heilen.* Von Professor A. Berthold. Göttingen.

(*b*) Practical Remarks on Near sight, Aged sight, and impaired Vision; with Observations upon the Use of Glasses and on artificial Light. By William White Cooper, Senior Surgeon to the North London Ophthalmic Institution. London: Churchill, 1847.

AFFECTIONS OF THE INTERNAL TUNICS, DIOPTRIC MEDIA, AND SENSITIVE APPARATUS.

Before we advance further in our Report, we may here remark that, independent of the new and original matter which we have quoted throughout this essay, and which was collected from a most extended field, there have also appeared several valuable lectures, crititical and historical dissertations, and records of cases in the different periodicals during the past year; but as such afford nothing new, nor of practical import, more than what was already known upon the subject, we have not quoted from them. Among these we may mention Historical and Critical Remarks upon the Operation for Cataract, by Mr. Watson, of Edinburgh(*a*); Doctor Jacob's lectures and papers on inflammatory and other diseases of the eye(*b*); Mr. Brett's Clinical Lectures at the London Western Ophthalmic Institution(*c*); various reports of cases and classification of ophthalmic diseases in the Provincial Medical and Surgical Journal, Mr. Hayes Walton's observations in the Medical Times, and numerous papers in the *Annales de Oculistique*, the *Gazette Medicale*, and the *Journal des Hopitaux*, &c.(*d*)

Cataract.—In a thesis, lately published by Dr. Edward Jäger, son and assistant to the celebrated professor in the Josephine Academy at Vienna, he has given the statistical results of his father's cataract operations. We have long been acquainted with the sensitive feelings which have actuated our distinguished friend in delaying to give the results of his experience to the world.

From the long experience acquired in the school of his illustrious predecessor and relative, Beer; with his own immense practice, both in public and in private, for many years past; from the very position which he occupies in the Viennese school, and from his acknowledged fame and success as an operator, the profession naturally expected something more at his hands during the last twenty years, than a few *brochures*, and some minor detached papers in the periodicals. We do not believe there is any European oculist who has so frequently extracted cataract as Frederick Jäger, and we therefore receive this little work of his son's, "*Uber die Behandlung des Grauen Staares*, Wien, 1845," with no small satisfaction.

From 1827 to 1844, Professor Jäger operated upon 1011 cases of cataract, of which there were

Lenticular, ...	764
Capsulo-Lenticular, ...	207
Capsular, ...	40

(*a*) See the Edinburgh Medical and Surgical Journal for January and April, 1846, pp. 57 and 347.

(*b*) Dublin Medical Press.

(*c*) The Lancet for October 31 and November 28. In the latter Number Mr. Brett has given a graphic illustration of a mode of performing artificial pupil, by means of a *lancet*, which is plunged into the aqueous chamber. We would recommend the study of Jungkins' *Augen Operationen*.

(*d*) Provincial Med. and Surg. Jour., Dec. 9, 1846, p. 585.

On these he has performed the following operations:

Superior extraction,	728
Inferior extraction,	9
Partial extraction,	58
Depression,	129
For absorption,	87

Of this number, sixty-three cases were unsuccessful. By the following table we learn the proportion of unsuccessful results, consequent upon each of these different modes of operation:

In 58 partial extractions,	3
In 737 complete extractions,	33
In 87 breakings up,	6
In 129 depressions,	41

From this it appears that in Jäger's hands, at least, or when skilfully performed, the happiest results will attend the extraction. The proportion of those who have irrecoverably lost their vision, to those who have been successfully operated upon, are, in extraction, $4\frac{1}{4}$; in depression, 16; and in breaking up, 8 per cent(*a*).

We have already, in another publication, described Jäger's various methods of operating, to which we would here refer our readers(*b*); but as Dr. Edward Jäger's little work has not yet reached us, we here quote from our Parisian contemporary. When, however, we receive the work itself, we shall again take up the subject. In the meantime we may remark, that we think the statistical results have been given in too round numbers; for instance, many of these cases must have been partially successful, and many of the extractions have, to our own knowledge, terminated in closed pupil, which were subsequently mended by artificial pupils; again, there is a deficiency in these statistical results in not explaining the amount of vision attained and the causes of failure; for, although we may presume that inflammation has been the chief cause, yet, no doubt, others assisted.

Mr. W. W. Cooper has lately figured and recommended "a new cornea knife," the object of which is, by its shortness, not to prick the caruncula lachrymalis, and, by its having a blunt shoulder, not to cut the edge of the lid. The first of these indications was, we think, achieved by Mr. Tyrrell's improvement and modification of Beer's knife, and as to the second, we must say it has never occurred in our own, nor have we ever seen it take place in the practice of any other operator(*c*).

On the immediate Removal of Traumatic Cataract.—In large ma-

(*a*) *Archives Generales de Medecine*, No. xlvi., p. 477.

(*b*) Austria, its Literary, Scientific, and Medical Institutions. Dublin: Curry, 1843.

(*c*) From Mr. Walton's observations in the 369th and 372nd Numbers of the Medical Times we would willingly quote, did space permit, as they contain some very useful practical information.

nufacturing communities, wounds of the lens, by means of sharp pieces of iron or cutting instruments, are very frequent. In such accidents the offending body generally penetrates the anterior chamber, and often the wound of the lens takes place through the iris. This generally occurs from injuries by a sharp-bladed penknife, or a fork; in which case the instrument is instantly withdrawn; but it sometimes happens that small spiculæ of iron, or even portions of a copper percussion cap, penetrate the cornea, and either stick in the lens or fall into the anterior chamber. Although such accidents are occasionally met with in this city, in the generality of cases we find that the wound of the crystalline body has been produced by thorns penetrating the cornea and lodging in its substance. If no further injury has taken place, inflammation is immediately set up in the lens, and it is astonishing in what a short space of time it will become opaque, and present all the characters of cataract. In addition to this it sometimes happens that immediate partial dislocation forwards takes place, the aqueous fluid having been lost through the aperture made by the cutting instrument, in which case the lens presses the iris against the cornea or rupture of the capsule, with fracture of the lens itself occurs, when portions of it may be seen bulging through the pupil, or even projecting into the anterior chamber. Subsequent inflammation and opacity follow, the inflammation in many cases engaging the deeper seated textures of the eye; to this succeeds synechia posterior, and very often closed pupil, the substance of the lens being in many cases absorbed, and the opaque capsule remaining. In some instances, particularly where dislocation has taken place, and the iris and cornea remain in contact, the opposed serous surfaces of these membranes adhere at the place where the opening into the former occurred, and so we have synechia anterior, and permanent blemish. To meet the urgent symptoms of this case the usual depletory and antiphlogistic treatment is resorted to, rest, low diet, the abstraction of blood, and the use of mercury, &c., together with dilatation of the pupil by belledonna. But the case generally ends in permanent cataract, and frequently in closed pupil in addition. There are cases of injury, in which the lens, either whole or in fragments, becomes dislocated, but this we shall consider at another time; the latest information, however, connected with this subject, has been afforded us by Dr. Walker, of Manchester, already so favourably known by his practical ophthalmic works. Barton and Gibson, many years ago, recommended the extraction of the lens, under the circumstances just detailed, but with the ordinary Beer's knife. Mr. Walker has invented, and kindly furnished us with a "grooved needle knife,"

of which the accompanying woodcut is a *fac simile*, and which was described in the Medical Times(*a*). With this knife he penetrates the

(*a*) The Medical Times, vol. xiii., pp. 107, 127, 135.

cornea, and pushes it at once through the pupil into the substance of the inflamed and softened lens. Shortly after we received Mr. Walker's gouge-knife, the following case presented itself, and as it exemplifies its use and mode of application, we here insert it, as reported by Mr. Doherty. A man aged 32, by trade a stone-cutter, was admitted into St. Mark's Hospital on the 24th June last, labouring under violent inflammation of the left eye, which, he states, was struck four days previously by a sprawl or splinter from a stone which a fellow-labourer was dressing. He suffered no pain at the time of the accident, but was instantaneously deprived of sight in that eye. In twenty-four hours from the receipt of the injury pain set in, which continued to increase until the following day, when it became excruciating. He applied at an hospital, where he was cupped, and had belladonna applied round the eye. Upon admission into the Ophthalmic Hospital his symptoms were as follows: severe pain in the eye, extending to the brow; extensive inflammation of the conjunctiva, and some vascularity of the sclerotic; profuse lachrymation, with occasional paroxysms of a "gush of hot, scalding tears." There was no appearance either on the cornea or other textures of a wound, or any breach of surface, and the cornea was perfectly clear; the iris greatly dilated and bulged forward into the anterior chamber, by the lens, which had become dislocated and partially broken and softened, so that by its overlapping the iris in some parts it gave the pupil an irregular and deformed appearance; the lens itself had become quite opaque, and of a light greyish colour; there was total loss of vision in the affected eye. He had, in addition, considerable fever, quick pulse, hot skin, great thirst, constipated bowels, and complained bitterly of loss of rest. His treatment consisted in cupping the temporal fossa, blistering the temple, which was subsequently dressed with mercurial and belladona ointment, and evacuating the bowels; in addition to which he was placed upon the use of mercury, in the form of calomel and opium, together with complete rest and the use of opiates at night to procure sleep and relieve the pain. Upon the 28th his mouth was affected, and the quantity of mercury lessened: symptoms as before. Upon the 30th the eye was found to be somewhat less inflamed, but the appearances in the anterior chamber just as before, and the pain complained of as being just as excruciating as ever. The extraction of the lens was, therefore, resolved upon, and immediately performed, in the presence of Dr. Thompson, of the Omagh Infirmary, Dr. Hughes, of Jervis-street Hospital, and other medical gentlemen. The gouge-like knife of Mr. Walker was introduced with the grooved side forward, at the lower and outer side of the cornea, pushed into the centre of the lens, and through the posterior capsule. The effect was instantaneous. The aqueous fluid and the opaque and softened lens were immediately discharged along the groove in the knife. This caused but very trifling pain, and was followed by immediate restoration to the perception of as much light as enabled the patient to distinguish large objects passed

before him. The pupil became partially cleared, and large flocculi of the grey matter of the lens floated through the aqueous chamber. Within two hours after the operation the patient experienced "the greatest possible relief." July 1st, the report is:—Slept better last night than since his admission; no pain whatever; conjunctiva still very much inflamed; wound of cornea healed; iris fallen back; pupil more regular and contracted; the opacity within the pupil much less, being apparently caused by portions of the rent capsule; sight improving. 2nd July.—No pain; can distinguish his fingers; pupil quite regular; some small particles of the lens and capsule lying in the anterior chamber; inflammation of ocular tunics less; the mercury to be omitted and Peruvian bark substituted. Under this treatment, and the use of nutritious food, all the symptoms rapidly improved. On the 8th all the flocculi that floated through the aqueous fluid had disappeared, and nothing remained but the portions of opaque capsule. 12th.—"Sight nearly as good as ever:" inflammation almost gone, no pain, nor any uneasiness; capsule disappearing: left the hospital next day. This case must be exceedingly gratifying to Dr. Walker, for we are convinced that if the cataractous lens had been allowed to remain as it was, and gradually absorb, the immediate relief, and subsequent rapid restoration to sight, would not have taken place.

In one of the late numbers of the Milan Gazette, we find an interesting account of the *post mortem* examination of an eye, from which a cataractous lens had been extracted six years previously. The patient was aged 96, and had very good vision of the eye up to the day of his death. In the cornea the only abnormal appearance discovered was a slight sinking along the line of incision. The iris was natural, the vitreous substance and retina quite perfect; the uvea was somewhat lighter in colour; and the choroid is said to have been found marked with stripes of a grey hue, and in some places to present a more mottled appearance than the healthy eye. All these appearances in the choroid, however, are frequently remarked in extreme old age.

On the Use of Glasses in Cases in which the Operation for artificial Pupil has been employed.—In a case in which a marginal artificial pupil (*Iridectomodialisis*) was performed by Dr. Guaglino, he says, after ten days the patient, a woman aged forty, and previously blind of both eyes, could only distinguish large objects: and adds, "I knew that in the course of time her sight would have gradually improved, and I tried only to augment the refractive power of the margins of the cornea and the crystalline body by applying a glass, slightly convex, to the operated eye. The improvement was so sensible that the patient wondered at it, and could scarcely believe the objects she saw were really such. She could distinguish the title of a book and the chain and drops of a watch," &c.(*a*) The success of the case was by this means rendered more brilliant, and in similar instances the application of lenses is worthy of imitation.

(*a*) *Gazetta Medica de Milano.*

Following up this inquiry, we find in the same periodical from which the above is quoted the following notice:

In the beginning of last year a letter was addressed to the Medico-Chirurgical Section of the Society for the Encouragement of Science at Milan, by Dr. A. Trinchinnetti, containing a *proposal for the employment of a medium to render more efficacious the operation in some cases of artificial pupil.* It is well known that the amount of vision acquired after the operation for artificial pupil varies according to the circumstances of the case and the position of the newly-formed aperture in the iris, or altered position of the natural pupil. A central pupil, when the cornea will admit of it, is said to be most serviceable: marginal pupils are less so, and that for many obvious reasons: a difficulty is experienced by the person so operated upon in directing the eye in such a way that its axis may approach the axis of vision; moreover, the rays of light entering at the margin of the pupil must of necessity pass through the cornea at a point where it is less convex, and these rays then pass through the lens, nearer to the periphery than in its normal state, and, consequently, where the refractive power is less than in the sentre. "I therefore imagined," says Dr. Trinchinnetti, "that a convex glass applied opposite the eye might compensate for this deficiency in the cornea and lens, and my expectations were realized in the following case." In November, 1845, a young man was rendered blind from ophthalmia, the consequence of an explosion of a mine. Both corneæ were opaque; in the left the lens was cataractous; the iris (naturally blue) had in this eye become of a greenish hue, mottled with yellow specks; there was, however, a distinct perception of light. Iridectomia was, therefore, performed, and turned out successfully; the eye remained closed up for eight days, at the end of which time it was examined, and a good triangular pupil was found to exist. At first the newly acquired vision was very inconsiderable, but in the course of a fortnight it improved so much as to enable the patient to perceive distinctly all large objects shewn to him. I then," says the author of this memoir, "tried the application of convex glasses, having always been of opinion that in such cases they might be exceedingly advantageous; and my satisfaction was very great when I guessed, by the smile of the patient, when looking around him, that he could see every thing clearly." With glasses number 4 the patient was enabled to read moderate sized print.

Artificial Pupil.—The various methods devised by oculists to produce an abnormal aperture in the iris are detailed in most works bearing on ophthalmic medicine, as well as in those which are devoted to the consideration of general surgery. There is one method of operating, however, with which English surgeons do not seem to be acquainted. It is that of dislaceration, as it is termed by the Germans; this is applicable to cases of cataract combined with closed or attached pupil (synechia posterior), and consists in opening the cornea, and with a sharp-pointed iris-hook introduced through

the aperture, tearing the iris from its lenticular attachment. We have seen Jäger perform this operation, and he introduced his triangular knife so deep that he also punctured the lens and iris about the situation of the original pupil, and with the hook detached the iris from the lens. The result was not as favourable as was expected, because the lens itself was opaque, and required a subsequent "drilling" for its removal.

At the meeting of the French Academy of Medicine, for the 21st April last, Dr. Robert read a paper upon this subject, and stated that, in many instances of synechia posterior, the capsule and lens remained transparent, and that the closure of the pupil is caused by a false membrane unconnected with the lens, in which case the ordinary mode of artificial pupil resorted to in this country, of cutting through both cataract and iris, by means of a small knife passed in through the sclerotic, as practised by Cheselden and Adams, would be quite unnecessary. Cases of atresia aridis, the result of internal inflammation, or following operations, are very common in these kingdoms; but, as far as our experience goes, the centre of the capsule of the lens is, in such cases, so much thickened and altered by disease, that the proposal of M. Robert would be inefficacious. In such cases we should much prefer detaching the iris from its ciliary margin, if we were sure that the circumference of the lens or capsule were unaffected(*a*).

Injury of the Iris.—Mr. Dixon, one of the surgeons of the Royal Ophthalmic Hospital, lately brought forward a case at the Medico-Chirurgical Society, of a woman who had received "a blow with a fist" on the left eye. The lids became swollen, and she suffered great pain, but did not apply for medical advice until eight months after, when Mr. Dixon found the cornea "clear, but all behind it was dark, and no iris visible." Just behind the upper edge of the cornea, a mark, about half an inch long, somewhat like a cicatrix, and mottled with three or four dark spots, was found to exist. The light was painful, but vision was greatly impaired. Mr. Dixon says that he could "distinctly see the surface of the retina," and that, by the catoptric test, he discovered that the lens was also wanting.

The figure of the globe was scarcely altered, and with a peculiar adjustment of glasses she could read brevier type. "It appears probable, therefore," says Mr. Dixon, "that the blow which she received ruptured the coats of the eye, and at the same time completely detached the iris from the ciliary ligament; that the lens was dislocated, and escaped, with the iris, through the wound; and the rent in the sclerotic had afterwards healed up." Without having seen this case it is difficult to offer an opinion upon it, and we should be sorry even to appear to differ from so eminent an authority; but without at all discussing the probability of the iris and lens being torn out by a violent blow, from an eye which could pre-

(*a*) See Medical Times, May 2, 1846.

sent, eight months subsequently, the appearance which this did,—we may mention the following fact; when the iris is *completely* paralysed, there is great difficulty in discovering it at all, and of this we have assured ourselves from observing several examples of it. We were twice shewn eyes from which we were informed the irides had been torn out by accident. Upon a very minute examination, however, we discovered a small trace of the iris, not quite half a line in breadth, at the inferior margin of the cornea. In both of these, it had been supposed that the sclerotic was wounded, but both patients persisted in declaring that they never had such a wound, nor did any appear; one had been struck with a briar, the other with a piece of turf(*a*).

In the last volume of the Medico-Chirurgical Transactions, Mr. Dixon has recorded the history of a case of great interest, both in a practical and physiological point of view, in which a large tumour was developed in the substance of the fifth nerve and its ganglion.

What gives value to this case is the length of time for which it was observed, and the accuracy of the *post mortem* examination, which latter is illustrated by a lithograph the size of nature, which shews the character and appearance of the morbid growth.

The patient, a woman aged 59, was first attended by Mr. Dixon, in October, 1844, for dimness of sight in the left eye. On that side the fifth nerve had completely lost its sensitive and motary function. In December inflammation of the eye set in, lymph was effused into the anterior chamber, and the pupil became closed. Subsequently the external rectus and levator palpebræ, as well as all the muscles supplied by the facial nerve, became paralysed. There was also total deafness of the left ear, and complete want of smell in the left nostril. She died in February, 1846. Upon examination, the brain generally, and all the nerves upon the right side, were perfectly healthy. A large lobulated mass was found attached at the junction of the pons varolii and crus cerebelli. "This tumour, from which the three divisions of the fifth nerve emerged, had hollowed out for itself an irregular pit in the concavity of the great wing of the sphenoid cone. The glosso-pharyngeal, vagus, spinal accessory, and lingual nerves were unaltered." It proved to be a degeneration of the trunk of the nerve and the Gasserian ganglion. The eyeball was as large as the right one; the sclerotic was of a natural thickness; the choroid of a reddish brown, with scarcely a trace of black pigment; the vitreous humour natural; the lens of a pale yellow colour, and opaque in the centre. The iris adhered to the middle of the lens, and the uvea was as black as usual; the cornea was but slightly opaque. Mr. Dixon's observations on this case will be read with interest(*b*).

Luminosity of the human Eye.—Some observations on a luminous appearance of the human eye, and its application to the detection of disease of the retina and posterior part of the eye, have been

(*a*) London Medical Gazette, December 4, 1846.
(*b*) Medico-Chirurgical Transactions, vol. xxix. p. 131.

published by Mr. W. Cummin, in the last volume of the Medico-Chirurgical Transactions(*a*). We have repeated some of the experiments detailed in this paper, but have not been fortunate to produce all the appearances detailed; at the same time we are free to acknowledge that some of our experiments were objectionable. But while we are not prepared to go the lengths which this gentleman does in his statement, we think it but right to insert the following good analysis of his paper from the London Medical Gazette :

"The author mentions the well-known luminous appearance of the eyes of cats, dogs, and other animals, the reflection from the eyes of albinoes, &c.; and after quoting from the works of Muller, Beer, and Tyrrell, as to other cases in which reflections have been observed from the posterior part of the human eye, proceeds to say, that the object of the present paper is to shew that the healthy human eye is equal, or nearly equally as luminous as the eye of the cat, &c., when observed under favourable circumstances; and the application of the alteration or loss of this luminous appearance to the detection of changes in the retina, and posterior part of the eye.

"The author states, that the reflection may be seen in the following manner: Let the person whose eyes is to be examined be placed at the distance of ten or twelve feet from a gas or other bright light; the rays of light must fall directly on his face, all rays falling laterally of the head must be intercepted by screens placed half way between the light and the eye examined. If the reflection be bright it will be at once seen from any spot between the light and the screen.

"The author having more particularly described the mode in which the observations brought forward in this paper were made, remarks:—The luminous appearance varies from a dingy red to a bright silver or golden tint, in some cases of extreme lustre, equalling that of a well ignited coal. It is more brilliant when seen at several feet distant. It was always seen when the eye was healthy and the pupil easily dilated. The reflection was seen in cases in which the lens had been removed by the operation of solution. Twenty cases were examined indiscriminately, vision being perfect in all, the age varying from a few months to sixty years. In sixteen cases the reflection was bright and very evident, in four faint, and seen with more difficulty, and in one it was not seen.

"As to the cause of this reflection, it is attempted to be shewn, that the retina, although a perfectly transparent medium in the living eye, is still a reflecting body. The formation of images upon the retina, the reflection from the cornea and lens, and other transparent bodies, are cited as proofs of this. Other circumstances would increase the brilliancy of retinal reflection—viz., the concave shape of the retina itself, the position of the lens, the influence of the vascular anterior layer of the retina filled with red globules of blood.

(*a*) Vol. xxix. p. 282.

"The author remarks, that the establishment of the fact of a similar reflection from the healthy human eye to that from the eyes of other animals, appears important in two ways. First, as a physiological fact, it shews that too much influence has been ascribed to the tapetum, that of the retina being entirely overlooked. Secondly, in a pathological view, the existence of this appearance in the healthy eye having been recognised, its non-existence, or alteration, may enable us to detect changes in the condition of the retina and posterior part of the eye heretofore unknown, or satisfactorily to see those which we only suspected."

There are certain states of the retina in which it becomes not only visible, but presents a brilliant metallic appearance, not unlike that seen in the commencement of malignant disease, even when examined with the naked eye in an ordinary natural light. The subject is worthy of much longer consideration that we are at present able to devote to it.

Malignant Diseases.—Little has been added of late years to our knowledge of the malignant diseases of the eye-ball; and although the following cases offer no exception to this statement, still as there are many points connected with the propriety of an operation undecided, we here record them, as affording a portion of that material which, when properly arranged, shall in time assist to decide the question. Messrs. Page and Gibb have recorded two cases of this nature. In Mr. Gibb's case, a man aged 50, the disease appears to have been true scirrhus, forming a hard, pearly-looking mass, which completely filled the orbit, and projected from between the lids. The remains of the eye were intimately incorporated with this structure: it was removed by Mr. Greenhow at the Newcastle-on-Tyne Infirmary, when it was found that no trace of the optic nerve could be detected. The point of most interest connected with this case is its history. The disease is traced back to a period fourteen years previously, when it was attacked with violent inflammation, from exposure to cold. During the next four years the man had several accessions of inflammation, and the eye became completely blind, but not in the slightest degree altered in shape or colour for three years subsequently. After this it is reported that a portion of the iris and cornea were removed, but for what it is not stated. Since then the eye-ball protruded, and he was attacked with violent orbital pain(*a*). It would very much contribute to the value of cases in which the eye-ball has been removed for malignant disease, if their subsequent history could be obtained.

Mr. Page's case was a woman aged 76, who, as in the former instance, had suffered from previous attacks of inflammation for a considerable length of time before either vision was impaired, or the eye enlarged or protruded. This appeared to be a case of true scirrhus; a small, hard, firm tumour was attached to the sclerotic, and overlapped the lower portion of the cornea. The tumour had

(*a*) Provincial Medical and Surgical Journal for June 24, p. 289

pressed into the interior of the eye. On the 28th of April, 1845, the globe and tumour were removed with immediate relief to all the patient's suffering. A section of the tumour proved it to be of a scirrhous nature with portions of melanotic matter scattered through it. The woman died in the December following, but no examination was obtained(*a*).

At a recent meeting of the Manchester Pathological Society, Mr. Wilson exhibited a melanotic eye-ball which had been removed from a woman aged 52, but the final result of this case is not known(*b*).

Concluding Observations.—We find that the great magnitude of this subject, and the necessarily limited space which can be devoted to such a Report in a periodical where so many other subjects have to receive a certain degree of prominence, prevents our continuing and concluding it in the manner in which we had intended at the commencement. We can only now enumerate the most prominent articles which have appeared in the various periodicals, on the subject of ophthalmic medicine or surgery, during the past year; and thus we hope to fulfil the two-fold object intended in this essay,—that of affording those, whose time or occupations do not permit of their wading through a great variety and an immense number of works, an abstract or retrospect of a particular branch of science, in the same manner as our admirable contemporaries, Braithwaite and Ranking, do for medicine at large, and also acting as a reference or *catalogue raisonne* to the progress of ophthalmic surgery for a twelvemonth. In endeavouring to fulfil this task, we have, no doubt, committed many omissions, but we can assure those who may think their papers have been overlooked that the omission was most unintentional.

Among the cases and practical remarks lately recorded, we would specify an instance of destructive inflammation of the eye after phlebitis consequent on amputation, related by Mr. W. Bowman, one of the surgeons of the London Ophthalmic Hospital. The *post mortem* examination of this case, and Mr. Bowman's remarks, have in no small degree enlarged the boundaries of ophthalmic pathology(*c*).

The *Gazette des Hopitaux* of last year contains several interesting notices on syphilitic purulent ophthalmic, by M. Ricord, in which he recommends continual inunction of belladonna round the orbit. Cases are related by Velpeau and Furnari, to shew the little effect which the vitreous humour exercises in comparison with the aqueous in the absorption of cataract. Furnari, whose work we noticed at the commencement of this Report, has written to prove that the membrane of aqueous humour, or that denominated on the Continent the membrane of Descemet, was known to the Arab phy-

(*a*) Provincial Medical and Surgical Journal for May 6, 1846, p. 205.
(*b*) London Medical Gazette, Jan. 1, 1847.
(*c*) London Medical Gazette, October 30, p. 754.

sician, Ali Ben-Isa, in 885. Sichel and Schoerer have likewise contributed many valuable contributions to this periodical(*a*).

The number for the 15th of September contains a lengthened article on nictalopia, to which we would particularly direct attention. The Provincial Medical Journal for April last contains a notice of two cases of hemeralopia, also of considerable interest; and the same periodical gave an account in August last of a family in which, for three generations, the males only were affected with congenital cataract.

The *Gazette Medicale* is likewise exceedingly rich in ophthalmic communications, of which we have already taken advantage.

In the Number for 14th of February, M. Munchmeyer de Verden calls attention to the value of calomel applied to the conjunctiva in inflammatory diseases of the eyes, as originally recommended by Fricke. He says, that not only in severe catarrhal ophthalmia, but even in inflammation following operations, he has found it most beneficial, and in scrofulous ophthalmia with photophobia, he looks upon it as a specific.

Paleotte recommends the use of hydriodate of potash and ammoniacal frictions to the forehead as a cure (?) for cataract. In the *Journal für Chirurgie und Angenheilkunde* will be found a very lucid essay upon conical cornea, by Professor Von Walther, of Munich.

Mr. Wharton Jones's work on ophthalmic medicine and surgery not having yet reached us, we are unable to make any extracts from it; we shall, however, notice it in our next Number, along with those recent Numbers of the Ophthalmic Annals which our space does not now permit of our applying to the purposes of this Report. These latter contain most valuable contributions from Sichel, Cunier, Hoering, Decondé, Stievenart, and others.

We should feel obliged for all Reports of Ophthalmic Institutions and Blind Asylums.

(*a*) *Gazette des Hopitaux* for May 23 and 28, June 13, July 14, July 25, and July 28.

MEDICAL MISCELLANY.

Ligature of the Common Carotid Artery on the left Side, in the Second Stage of its Course. By J. W. Cusack, M.D., Vice-President of the College of Surgeons, and Surgeon to Dr. Steevens' Hospital.

John Petty, aged 20, a healthy, country young man, of rather spare habit of body, was admitted into Steevens' Hospital, No. 7 Ward, on the 1st of March, 1836. His mother states that when eight or nine years of age, and some time after receiving a blow of a hand-ball, of which he has no recollection, a soft, pulsating tumour was observed in the superior anterior region of the neck, on the left side, in the line of the common carotid artery. When first noticed, it was about two inches in length, and the thickness of a finger; it produced no inconvenience, but he was sometimes affected by giddiness and lightness of his head, on rising suddenly from the sitting posture. Its increase in size was very slight, having scarcely become as large as a hen's egg, until about three weeks since, when, after leaping violently during the day, he felt next morning a stinging pain in the tumour, running up towards the ear, which was increased on making any exertion, but subsided in four or five days after being bled. Since the time of his being attacked with the pain, the swelling has increased gradually to its present dimensions.

The tumour extends from the angle of the jaw, and one inch and half from the tube of the ear above, to within a finger's breadth of the sternum below, when the head is kept in the horizontal position; but when inclined backwards, the distance is increased to three. The sterno-mastoid, which is wasted, winds round its outer margin, together with the jugular vein; while, anteriorly, the tumour touches the thyroid cartilage, and has a large superficial vein running over it, which sinks down behind the internal margin of the sterno-mastoid. It communicates a strong and distinct pulsation to the hand over its entire extent; pressing on the carotid artery firmly below causes the pulsation to cease, and the tumour to diminish in size. The sac is firm and resisting, and at one part, anteriorly, feels so hard as to appear formed of a sphere of bone. Its contents seem to be tolerably fluid; the stethoscope conveys to the ear a distinct *bruit de soufflet*, which is so intense as almost to approach to the *bruit de rafee*. It produces little uneasiness, but he sometimes feels occasional stings of pain in it during the day, referred to its anterior part, which come on without any apparent cause. The integuments over it possess their natural colour. He appears in good health, has no cough, dyspnœa, or dysphagia; sleeps well, and never starts suddenly from it; has no palpitation or unnatural action of the heart, nor any thing to indicate disease of the arterial system generally: pulse 70.

March 22nd. The tumour has been gradually, but slightly, increasing in size since admission, and this morning the operation of tying the common carotid artery was performed. It was commenced by making a transverse incision, about three inches in length, through the integuments, down to the sterno-mastoid muscle, a little above and parallel to the clavicle. A director was then passed underneath this muscle, which was separated from its inferior attachments, except a small part of it internally, where the vein passed down. The sheath was then arrived at, by cautiously working through the cellular substance with a blunt instrument, and dividing the deep fasciæ and portions of the sterno-hyoid and thyroid muscles on a director. The depth and necessarily small extent of the wound rendered the operation tedious and difficult, and, besides this, the pleura (which shewed itself immediately on the division of the deep cervical fasciæ) was every moment thrown up into the wound, proving a source of much embarrassment and hazard. The internal jugular vein offered no impediment to the passing of the needle. On the ligature being tightened, pulsation immediately ceased in the tumour, which also underwent a sensible diminution in size. The external wound was closed by two points of suture and adhesive plaster, the patient placed in bed, and a draught given him of twenty drops of acetum opii. Very little blood was lost during the operation.

Evening. Passed the day tranquilly, sleeping a good deal; complains much of stitches across his chest, which, he says, catch his breath; tumour remains diminished and without pulsation; pulse 114.

23rd. Passed a quiet night; says his breathing is much freer; tumour has acquired a considerable degree of solidity; ordered ten drops of the tincture of digitalis three times a day; feels much inclined to sleep.

24th. There is a good deal of fulness and tenderness, with a diffused blush of redness, over the affected side of the neck; sutures removed, when a few drops of blood issued from the wound; respiration free and natural; has no pain in the chest, no headach, or other feverish symptom, but the disposition to sleep still continues; pulse 120; bowels costive; ordered two aperient pills, and a purgative enema.

25th. The bowels have been freely acted upon; all the inflammatory symptoms in the neck have disappeared; wound suppurating; pulse 120.

26th. Had slight epistaxis this morning; pulse 100; somnolence has disappeared.

April 4th. During the last eight days he has continued to improve; pulse 80.

12th. Nothing worthy of note occurred since last report. The ligature came away this morning, being the twenty-second from the date of its application. It evidently had been detached from

the artery for some days previously, but was detained in the wound by the granulations(*a*).

The following circumstances in this rare and interesting case are worthy of attention:—First, the mode of formation of the tumour. Secondly, the suddenness of its increase. Thirdly, the depth of parts which had to be divided in the operation. Fourthly, the protrusion of the pleura. Fifthly, the absence of all inconvenience after the application of the ligature. Sixthly, the instantaneous and permanent cessation of all pulsation.

Case of Pulsating Veins. By Sir H. Marsh, Bart. Reported by Dr. Freke.

Merrion-square, September 30, 1846.

Dear Sir,—I send you the particulars of a case which was admitted some time ago into Steevens' Hospital. For the opportunity of observing and treating this case I am indebted to the kindness of Mr. Kirby, who requested me to see the patient at his own house, and subsequently to have her admitted into hospital. The disease is one of rare occurrence and great interest. The enclosed statement, for the truth and accuracy of which I can vouch, has been furnished by Dr. Freke.

I remain, Sir, &c.,
H. Marsh.

To the Editor of the Dublin Quarterly Journal of Medical Science.

Catherine Duffy, aged 28, was admitted into Steevens' Hospital under Sir Henry Marsh, 13th May, 1846, presenting the following appearance:—

All the superficial veins of the right arm and hand are greatly dilated; those on the back of the fore-arm, above its middle, being much convoluted as well as swollen. The veins on the back of the hand are much contorted, and in various places varicose. On the little and ring fingers the veins present, in a well-marked manner, the appearance of aneurism by anastomosis, whereby these fingers are irregularly swollen to fully double their natural thickness.

A little before the axillary artery becomes brachial, or just above the lower edge of the tendon of the latissimus dorsi, the vessel becomes abruptly dilated to fully four times its natural diameter. The dilatation is of the entire circumference, and extends about two inches along the brachial artery; its calibre is tolerably uniform or cylindrical, except that on its anterior and internal surface it assumes a form somewhat irregular or nodulated. Above this dilatation, as far back as can be traced by the finger, the ves-

(*a*) This case was taken by Dr. Hunter of Belfast, when Clinical Clerk in Steevens' Hospital.

sel, though not considerably dilated, feels larger than is natural, or than its corresponding portion on the opposite side. About two inches below the commencement of this dilatation, the artery as abruptly contracts. The contraction is such as to convey the idea of a cord having been tied tightly around the vessel. Immediately below this contraction the vessel appears again to dilate, but not in its entire circumference; a pouch or sack, somewhat of the size and form of a split hazel-nut, occupies its anterior and internal surface. Between this sack and the vessel there is an obvious communication, the former being readily emptied by pressure. Below this last described tumour, till pretty near its bifurcation, the artery is of uniform calibre. It is somewhat, but inconsiderably, larger than the corresponding portion in the opposite extremity. From just above the internal condyle to its bifurcation, the vessel is again uniformly dilated to fully double its natural dimensions, The radial and ulnar arteries are distended to pretty nearly twice their natural size, uniformly throughout their entire extent.

On the posterior and internal portion of the fore arm, corresponding to about the middle of the ulna, is a soft, compressible tumour, slightly pulsating, and in size somewhat about that of half an ordinary sized walnut. In the palm of the hand, immediately beneath the pisiform bone, is an ill-defined pulsating swelling, which resembles an aneurism by anastomosis; beneath this, and corresponding to the cleft between the middle and index finger, is a tumour of a similar nature, somewhat less in size, and less distinctly pulsating.

Pulsation is visible immediately above the sternum, along the brachial, the radial, and the ulnar arteries; in the tumour on the back of the fore-arm, and in those in the palm of the hand. Pulsation is not visible in the carotids, nor in the tumours on the little and ring fingers.

By pressure applied to the axillary artery all pulsation in the tumour is arrested. Fremissement is well marked along the brachial, less distinctly along the radial and ulnar arteries. On taking the patient by the hand, and using gentle pressure, a tremulous purring sensation is communicated by the tumours in the palm.

On applying the stethoscope immediately beneath the acromial end of the clavicle, there is heard an intensely loud continuous murmur. This sound becomes somewhat augmented at every ventricular systole. As the stethoscope is moved towards the sternum, the murmur becomes less and less audible. At no part of the sternum can this murmer be heard. The heart's sounds appear perfectly normal. A *bruit de soufflet* is audible along the entire course of the brachial, radial, and ulnar arteries. A murmur exactly resembling the placental soufflet is heard in the various pulsating tumours. Nothing abnormal can be recognised in any of the other vessels in the body.

The pulse at both wrists is 72, and regular; being, however,

on the affected side considerably fuller and somewhat stronger than on the other.

The temperature of the affected limb (one of the symptoms the patient complained of as most distressing), was, when measured by the thermometer, always several degrees higher than that of the other. The amount of the difference was found to vary with the condition of the circulation, being augmented by whatever produced an acceleration of the heart's action. Any slight excess of exercise, she states, causes the limb to be bathed in perspiration.

There is a dull, aching pain, of variable intensity, at all times present in the arm, from which some relief is experienced, as also a partial emptying of the vessels, and slight diminution in the size of the various tumours, by holding the arm in an elevated position.

The patient's general health does not appear to have suffered much; her strength is but little impaired, her appetite good, her bowels regular, and her sleep undisturbed. Her catamenia did not appear the last two menstrual periods, but had always been previously regular.

The patient's history is briefly as follows:—

Her parents, and numerous brothers and sisters, are healthy. She has been married eight years, and has had five children, nothing remarkable as to hæmorrhage or otherwise having occurred a ther confinements. Her circumstances being independent, she has never pursued a laborious life, nor employed her right arm in any way calculated particularly to fatigue it. She has ever considered herself healthy and strong, except that intestinal worms have been to her for some years a source of much trouble. She states that from childhood, so far back as she can recollect, she thinks she had observed the veins of the affected arm and hand to have been larger and more swollen than those of the other; but having experienced from this no inconvenience, she never attached to it any importance. About a year and a half ago, she, for the first time, observed a throbbing to occur in the affected arm after exertion, or increased exercise of any kind. Somewhat about the same time, as well as she can recollect, she first felt a sharp stinging pain occasionally shooting down the arm, commencing, as she describes it, at the inferior angle of the scapula, and shooting through the arm to the hand. For some time she attached but little importance to these symptoms, the pain being but occasional and momentary, and the throbbing caused alone by exertion. Since then to the present time they have been gradually becoming more distressing ; the occasional sharp stinging pain has been replaced by one constant, dull, and aching ; while the throbbing and distressing sense of heat, which at first was brought on alone by excess of exercise, is now ever present, even while at rest. She can give no definite information as to the period of the first appearance, or the progress of the various tumours, but is of opinion that they have all formed within the last eighteen months. She has had much medical advice, having consulted several physicians, and having been for

some time in hospital previously to coming into Steevens', but is of opinion that she has derived but little benefit from treatment.

For the sake of brevity, a detail of the daily treatment has been omitted, the more especially as it appeared to exercise but little control over the disease. It consisted, for the most part, of general sedatives, with the local application of refrigerating lotions, and the occasional employment of pressure,—pressure generally of the entire limb, and specially on the distinct tumours, varying its position and degree as appeared indicated. The latter part of this treatment required caution, as also a prolonged interval between the periods of its employment; for, even when inconsiderable, it soon caused no slight augmentation of the patient's sufferings. Most relief appeared to be derived from cold applications to the limb.

At the expiration of somewhat more than two months, the patient, at her own request, left hospital, having apparently derived but little benefit from its treatment.

Case of Recovery from Mania and other violent nervous Symptoms, following upon the Bite of a Mad Dog. By J. O. Pemberton, F. R. C. S. I., Ballinrobe.

On the 16th of February, 1842, a woman named Bradley called on me to visit her daughter, fourteen years of age, who was very ill, and, as she said, "out of her mind."

The history she gave me was, that about a fortnight since she became dull and heavy, wished to be alone, and was constantly muttering to herself; became fretful and peevish, easily irritated, and would not bear the slightest contradiction, or do anything she was desired, except what she liked herself (although previously submissive and obedient); became jealous of her brothers and sisters if she saw the slightest attention paid them; lost her appetite, and would not eat more than a few cold potatoes, which were put by for her after the family meal, as she would not join it, and eat when she supposed no one was watching her. In this state she continued, daily growing worse, talking more audibly to herself, and praying with the greatest fervour, and then suddenly throwing whatever came next to her hand at her brothers and sisters, to whom her dislike had increased; she continued daily growing worse, becoming more peevish and irritable, with a greater desire to injure those near her, and from penitence and prayer she began to curse and blaspheme. At length she became so furious and dangerous, endeavouring to bite every one that came near her, and beating (whenever an opportunity occurred), or throwing whatever she could find at the other children, that she had to be tied, to prevent her doing mischief. A relative of her's, a stout young man, of whom she appeared to be somewhat afraid, had to be constantly near her, night and day, to control her, and to tie her when necessary. Her memory was perfect, as she knew any of her neighbours who came in to see her. Such was her state when her mother came for me. I found her

greatly emaciated, her eyes blood-shot, and staring with a peculiar wildness of expression; her mouth full of saliva, thick, viscid, and tenacious, and hanging from the angles of her mouth; from this she endeavoured to free herself, by spitting, when her hands were tied, but could not, from its tenacity, and the rapidity with which it accumulated. When her hands were free, they were constantly put up to her mouth to remove it, and then she flung it at whoever was next her: she talked and cursed without ceasing. I attempted to feel her pulse several times, but she endeavoured to bite me each time I tried to do so; at last I had her held, but her struggles were so great I could not measure it with accuracy, but think it ranged from 140 to 150. I shewed her my watch, but she turned away her head, and would not look at it; I then desired some water to be given her, which was handed to her in a shallow wooden cup, which with some difficulty she took, looked at the water for some time, every limb trembling, and, on being desired to drink it, she put both her hands to the vessel, gazed with knit brows and fixed eyes at the water, and then (still being pressed to drink it) with a sudden effort gulped some of it down, and threw the vessel away, after which she staggered, appeared quite exhausted, and had to be supported. On questioning her mother if she was aware of any accident or injury having happened to her daughter previously to her getting into this state, she told me that about six months before she had been set upon by a dog which seized her, and bit her in three places in the left leg, and in the inside of her right arm, out of which latter place he took a piece of the flesh, leaving a large wound of the size of a crown piece or more; that she brought her to a medical gentleman in town who dressed the wounds; that she had the dog drowned, and, after an old custom, had the liver taken out and a piece of it applied to each of the wounds; that about four months elapsed before the wounds were completely healed; that she was always a healthy child, and never complained of any illness, either before or since she was bitten, until her present attack, and that she was always dutiful and obedient until now; she has not slept for the last three or four days.

I had the head shaved immediately, cold lotion applied to it, and a blister placed on back of the neck. A tartar emetic mixture to be administered every three or four hours, and four grains of calomel to be administered three times a day.

18th. Had about half an hour's sleep last night; not quite so irritable, but still talking and cursing; took but one powder; took the mixture occasionally only; and as the mother gave it in double quantity, on account of her not taking it at the stated intervals, it produced sickness of stomach and vomiting; her bowels were moved twice; would not put out her tongue, or do anything she was bid: to continue the calomel and tartar emetic.

19th. Had more sleep last night than she has had for a fortnight before; appears better; eyes not so wild or staring; still talking, and scolding rather than cursing, but not so violent or irritable. Her

mouth is not quite so full of saliva, but still she has to remove it with her fingers; it does not now appear hanging from her mouth as before, nor is it as viscid. The tartar emetic mixture was given her in double quantity again, which induced vomiting. Once only I gave her some water to drink, to which she evinced some dislike, but took a little of it. Pulse 120; bowels freely acted on. To have the medicine repeated.

20th. Appears much better this morning; slept for two hours last night, and does not talk near so much as usual; saliva not so abundant, nor so viscid; her countenance appears much improved; her eyes have lost in a great degree their suffusion and wild expression; has still a great dislike for food, but takes more nourishment than she has done for some time, and took a little whey during the day; also her mixture more regularly, which acted well on the bowels; pulse 100 and full.

21st. This morning appears much improved in every respect; slept a good while last night, and is much more easily managed; saliva not so abundant, neither does she talk so incessantly; took more food yesterday than she has done for some weeks, and from her mother; has lost in a great degree her dislike to her friends and relatives, neither has she now that great desire to injure them; does not curse now; bowels moved twice; pulse 100. To continue the tartar emetic mixture.

21st. Much better this morning; slept quietly for some hours last night; is much more easily managed, and has not the same dislikes; uses more solid food; countenance more natural, and the suffusion of her eyes gone; took her mixture regularly; pulse 90, and fuller. To omit the calomel, but to continue her mixture.

22nd. Still improving: has slept a good deal since yesterday, and is much more qhiet and rational; does not speak with the same volubility, and has entirely ceased to swear; has taken food during the day; saliva lessened in quantity, and more natural; has lost all her propensity to mischief, and has become reconciled to her brothers and sisters. Pulse 90, fuller and softer; bowels moved three times. To lessen the amount of tartar emetic.

23rd. Continues to improve rapidly; has slept during the day and night; is altogether much easier, and talks less; asked for some food, which she eat with an appetite; mouth almost free from saliva; has spoken kindly to her brothers and sisters. Pulse 80, full and soft; countenance natural; bowels free.

Not to prolong the details of this case further, I may mention that from this time she rapidly recovered. In four days after this every symptom of her malady had disappeared, except great bodily weakness. I saw her a few months since, a fine young woman, and in the enjoyment of perfect health. I asked her mother if she ever alluded to her former illness, when she told me she never did, nor did she like any allusion to be made to it.

A Case of Enlargement of the Thyroid Gland, treated by Seton. By Henry Kennedy, M. B.

In November, 1845, a woman, aged 35, applied to me on account of an enlarged thyroid gland. She had been married nine years, and had four children; she has lived of late years in Dublin, and has always been healthy in every respect, excepting the disease she applied about. The gland had begun to enlarge so far back as the year 1832, thirteen years before my seeing her. At first it had increased very slowly; but the last year or so, she said, it grew more rapidly. When I saw it the tumour was at least the size of the largest orange; it was very hard to the touch, as if it were solid, but was divided into two portions, of which that on the right side was much the largest; it did not vary in size at the menstrual periods. It was not, however, on account of the bulk of the tumour, for in that respect there was nothing remarkable, that the patient applied for relief, but because it had affected her swallowing from a very early stage of its growth; and this symptom had latterly become much more distressing: solids were more difficult to get down than fluids, as might be expected. She referred the obstruction to the seat of the tumour. She told me she had shewn it to other medical men, but she considered it still increasing. I ascertained that iodine had lately been used, both internally and externally for some weeks.

Under all the circumstances of the case, the tumour and dysphagia on the increase, and iodine having got a full trial, I determined on some more decided line of treatment, the more readily as the patient herself was most anxious that something should be done. The plan by seton seemed to hold out the best prospect of success, and it was carried into effect, having previously brought the general health into the best condition. The first seton was passed on the 30th of November, 1845. A common curved needle of the largest size, with its eye nearly full of doubled silk thread, was passed from below directly upwards, through the anterior portion of the tumour, about half an inch from the middle line of the neck, and including a space of at least one inch and a quarter between the entrance and exit of the seton. This was then fixed so as to prevent its slipping out, and the patient was desired to keep a poultice constantly applied, and also to keep her bed for two days; no unpleasant effects followed. It is enough to state here that this first seton was withdrawn at the end of ten days; that at the end of a fortnight a second one was passed; that it was double the size of the first, and its introduction was followed by a very considerable degree of constitutional iritation, which, however, subsided in about four days; suppuration then became very fully established, and the second seton was withdrawn, after being in twelve days. With the exception of poulticing, nothing was done during the next four months. In this time considerable changes had taken place in all the anterior portion of the tumour, and that part of it which occupied the left

side; it had become very hard, and gradually, but steadily, diminished in size. The larger portion of the tumour, however, occupying the right side of the neck, remained stationary. It appeared, indeed, as if it had grown somewhat larger; but this was not certain. A third and last seton was passed through this portion of the tumour in the month of April, 1846; its direction was upwards and outwards, so as to take in the longer axis of the swelling. This seton was four times larger than the previous one; it was passed with a large packing-needle, with the edges and point properly ground. After sixteen days the seton was withdrawn, the suppuration being then very considerable. Finally, after four months more, the entire tumour had so much lessened, that it might be considered as cured. The entire process occupied between eight and nine months.

At the present time (January, 1847) the eye cannot detect any tumour, but to the touch one remains, which is probably the size of a small chesnut. There is no deformity whatever, and very trifling marks of where the setons had been passed. The patient, too, feels no difficulty of swallowing, at least none that causes any inconvenience.

As I wish here to confine myself merely to the facts of this case, I have purposely omitted the consideration of several points which might fairly admit of discussion; such as the nature of the tumour; the question of a more general use of this plan, after the more ordinary means have failed, particularly iodine; the nature of the dysphagia, as to whether it was nervous or mechanical; the causes of those enlargements, and other points connected with the subject in a general way. It is to Quadri, of Naples, that we are indebted for the plan of treatment put in force in the present case. Not being certain of what the result of the treatment would here be, I did not take the precaution of getting a cast of the tumour when it was of large size. This, probably, is of less consequence, as the patient has been seen by several gentlemen, to whom I may here refer. Dr. Clarke, of Herbert-street, saw her repeatedly; he took much interest in the case, and kindly gave me his assistance. At a late stage, and after all the setons were withdrawn, the patient was seen by several physicians and surgeons of this city.

Caries of the Cranium ending fatally. By R. R. Gelston, M. D., Surgeon to the County and City of Limerick Infirmaries.

Margaret Mac Namara, aged 25, married, was admitted into the Limerick Infirmary in September, 1846: states that six months previously she perceived a small tumour on the upper part of the occipital bone, which has since gradually increased to its present size, that of a duck's egg. She never experienced any pain or inconvenience from it, but, in consequence of its increased bulk, she applied for advice, and became an external patient at the hospital about a month previous to the date of her admission. Local applications

proving ineffectual, a small opening with a lancet was made into the tumour, when a bloody fluid issued from it, but it soon again regained its usual size.

On the 17th of September she was admitted into hospital; her general health seems good; states that she has never suffered from any illness, nor experienced any injury which could cause the tumour; says that she has never had syphilis, nor does she present any appearance of that disease; catamenia regular; has had one child; is of a strumous habit, and the only unusual symptom which is remarked since the commencement of the swelling is deafness of both ears. The tumour was laid open through its entire length, for the purpose of allowing it to heal by granulation, when the scalpel was found to sink deeper than it ought, and on examination it was found that the bone beneath had been completely absorbed to a considerable extent, together with the membranes of the brain. Some blood and thick pulpy matter came from the wound. She did not appear to experience any particular change from this operation. All her faculties, both mental and physical, remain quite perfect; persists in her statement that she has never suffered from headachs, but says that she has been long in the habit of carrying heavy weights on her head; pulse eighty; pupils natural; the wound was lightly dressed, and a purgative administered.

18th. Ten o'clock, A. M. a considerable change for the worse has taken place; she complains of great headach; pupils are contracted; pulse 110, very feeble, and brain-like matter issues in large quantities from the wound. On visiting her at half-past six o'clock in the evening, her symptoms were found to have rapidly increased in severity: the stomach had become irritable; the deafness much increased; great debility present; surface of the body cold; for the first time complains of pain in the back of her head; has become incoherent, and answers questions in a very sluggish manner.

19th. Comatose; pupils natural; was delirious during the night, and affected with constant vomiting; she died in the evening.

This is a remarkable case, inasmuch as no symptom occurred during the formation of the tumour in the scalp, and the absorption of the bones of the cranium and cerebral membranes, to indicate the extensive mischief which was going forward. She never had any interruption of her intellectual faculties, and continued to follow her usual laborious occupation up to the hour of her admission into the Infirmary. It shews how cautious we should be in opening or in any wise interfering with the tumours of the scalp, even when unattended with symptoms of any description.

[Cases in which fatal consequences have followed, either remotely or immediately, upon surgical operations, are rarely recorded by practitioners, and much credit is due to Dr. Gelston for having brought the history of this case before his professional brethren.

Dr. Gelston has forwarded to us a portion of the cranium, and,

from the examination of it, we are only surprised how life could have been prolonged under the circumstances for any length of time. The caries extends both within and without the cranium for upwards of five inches in extent in the longitudinal, and four inches in the transverse diameter, and principally occupies the central portions of both parietal bones, and the superior angle of the occipital. An irregular aperture, three inches and a half by two and a half, exists, in which the bone is completely deficient, and the edges present the usual worm-eaten appearances of such cases: the rest of the bone is very compact and remarkably light. The head must have been very small and globular. There are some topics connected with the history of this case well worthy the attention of phrenologists. The site of the caries is that on which head-burdens are usually carried.—Ed.]

Case of Softening of the Heart in a Person who was believed to have died of Starvation and Exhaustion. By B. G. Darley, M. D. Coolock.

On the 4th of January, 1847, I was requested by the coroner to examine the body of an elderly female, who was reported to have died of want and starvation in this neighbourhood. The history of the case was shortly this: she was a poor woman, who obtained her living by wandering about from place to place, and was in the habit occasionally of stopping a day or two in the house in which she died. She had come there three days before the above date, and complained of much weakness, and was suffering, as the people in the cabin said, from "a kind of asthma." She had some tea to drink, but eat nothing. She died on the 3rd instant, apparently from exhaustion. On opening the chest, the lungs appeared healthy, and collapsed slightly; there was no water in the pericardium, the heart was larger than natural, the auricles greatly distended and full of blood. On lifting up the apex to see the size of the heart, my finger went through the substance of the left auricle, and this with a very slight pressure indeed; out of the rent made by my finger poured a great quantity of fluid blood which filled the pericardium; the right auricle was in the same condition, literally choked with fluid blood, and in this auricle it was of a very dark colour; but the most remarkable character was the softened state of the walls of both auricles, particularly the left; they were of the same colour and as friable as the liver, and not unlike portions of lung affected with pulmonary apoplexy. The increased size of the heart appeared chiefly made up by the great dilatation and distention of the auricles; the ventricles did not appear larger than natural; they were empty of blood, and their muscular structure was of a pale colour.

The viscera of the abdomen were generally healthy, the stomach was contracted, and nothing in it but half a pint of a dark coloured fluid; the intestines in parts were occupied by the same. The

omentum was destitute of fat; indeed the absence of adipose tissue throughout the whole body was remarkable.

The brain was examined, and was perfectly healthy, but particularly bloodless.

Now what was the cause of death in this case? There was no lesion of the brain, lungs, or viscera of the abdomen, and though the heart was as described, it had preserved its integrity, at least there was no solution of continuity in its walls; and this might readily have taken place, considering the softened state of the auricular tissue, had the individual lived a little longer, and the auricles had power to act on their contents; in such case death, most probably, should have been laid to the door of a diseased heart, and not as, in my opinion, the result of an altered state of the contained blood.

The coroner's jury returned a verdict, that "death was caused by want and destitution."

In a physiological point of view, I should say that insufficiency of nutritious food rendered the heart unable to expel its contents, its muscular structure, particularly that of its auricular portions, was so softened and weakened as to allow of dilatation to the greatest possible amount; the blood gradually accumulating, congestion took place, and the woman died of what we may call congestive apoplexy of the auricles of the heart. The manner this is caused by starvation is thus: the blood is rendered thin, has little or no fibrin in it; the heart, along with the general muscular system, is weakened, and unable to expel its contents; congestion takes place; its cavities, particularly the auricles, yield to pressure; and, as is the case in all muscular cavities when distended beyond a certain extent, atony supervenes, the muscular fibres no longer contract, and death is the result.

From this examination, the difficulty of breathing during life may be explained, and, had an opportunity been afforded before death, we should probably have found the pulse slow and intermitting.

This case differs from the fatty degenerations of the heart in many particulars. First, this, as we have seen, engages the auricular portions of the heart, while it is the ventricles that are generally occupied by fatty deposition; again, it is in the corpulent and the full habit that the heart is predisposed to the fatty degeneration, whilst the softened auricle will be found in the ill-fed and destitute; again, the mode of death in the former has more of an apoplectic character, whilst in the latter the spark of life ebbs out from want of sustenance and vital power. In the fatty heart, the solids are the first to suffer, whilst in the other the mischief begins in impoverishment of the fluids.

As I fear the profession in this country will have many opportunities of examining the bodies of individuals dying under similar circumstances, though the case above noticed might have occurred at any period, I think it might be interesting for medical men to give reports of their examinations, and to observe the state of the several viscera, and especially the heart, in such cases.

A Case of profuse Hæmaturia, the result of Injury, treated successfully with Gallic Acid. By James S. Hughes, F. R. C. S., Surgeon to Jervis-Street Hospital.

John Hyland, aged 30, a Custom-House porter, admitted into hospital on September 8th, 1846 ; states that, about half an hour before admission, he was employed in lowering a cask full of sugar, when he was struck by the handle of the windlass with great violence in the left lumbar region; he was rendered insensible for a short time, and was carried into the hospital. On examination an extensive ecchymosis was found to exist along the left side of the spinal column and lumbar region: the ninth, tenth, and eleventh ribs were fractured close to the vertebræ; there was excruciating pain on pressure over the region of the kidney; abdomen tympanitic ; testicles retracted ; countenance deadly pale, covered with cold perspiration, and highly expressive of pain ; pulse quick and feeble. Soon after admission he expressed a desire to make water, and expelled, with much difficulty, more than half a pint of pure blood. Ordered six leeches to the seat of pain, and to have a draught containing acetate of lead and acetum opii every second hour.

9th. Slept very badly; pain in the left lumbar region intense; much increased by the slightest pressure; urine highly loaded with blood; finds considerable difficulty in emptying his bladder; bowels freed during the night; the leeches were repeated, and the draughts continued.

10th. Pain somewhat relieved by the leeches ; made several attempts to pass his urine during the night, but could not do so; constant desire to pass water; bladder distended. A gum elastic catheter having been passed into the bladder, a considerable quantity of blood and urine were drawn off; there were several long clots of blood discharged. My colleague, Doctor Neligan, having suggested to me a trial of gallic acid, I was induced to order it in the form of pills, with extract of gentian, two grains and a half of the acid in each pill, which were taken at intervals of three hours.

11th. Considerably improved; the quantity of blood in the urine much diminished ; after the third pill, the presence of gallic acid in the urine was detected by the addition of a few drops of tinctura ferri, sesq. chlorid, which converted it into a perfect ink. The pills were repeated.

12th. Passed a good night; made water freely; urine limpid, quite devoid of blood ; pain in the lumbar region considerably decreased; pulse sixty-four, soft. Discharged cured on the 18th.

Gallic acid has proved a most useful addition to our list of astringents. Both as an external and an internal remedy in hæmorrhages its character stands high, and justly so; it is now generally alleged to be the active principle in Ruspini's celebrated Styptic, which Dr. Thompson is of opinion consists of gallic acid,

sulphate of zinc, opium, alcohol, and rose water; the gallic acid evidently being the active ingredient. Sometime since I saw the power of Ruspini's Styptic put to the test in the case of a gentleman who had some of the branches of the palmar arch of arteries opened by the bursting of a bottle of soda water; profuse hæmorrhage having ensued, and attempts to secure the bleeding vessels having been tried in vain, graduated pressure was applied, but to such an extent, and for such a length of time, that sloughing of the palm of the hand ensued, with inflammation extending up the forearm, and considerable fever, together with repeated periodical hæmorrhages, by which the patient was considerably reduced: at this stage I saw the case in consultation, when it was agreed to give a trial to this powerful styptic, and a single application of it was followed by an immediate arrest of the hæmorrhage, and recovery. As a local application in aphthous ulceration of the mouth and tongue, I can speak highly of gallic acid; it is also a valuable injection in the gleety stage of gonorrhœa. As an internal remedy, gallic acid has been used with great success by Dr. Simpson and others in certain forms of uterine hæmorrhage, and with this advantage over most other anti-hæmorrhagic medicines, that it had no constipating effect on the bowels; but as gallic acid passes directly to the kidneys, acting thereby as a direct astringent, the urine becoming impregnated with it very soon after its exhibition, it consequently is an astringent peculiarly suited to hæmorrhages from the urinary organs, and as such has been strongly recommended by Drs. Steevenson, Golding Bird, and others. Dr. Steevenson has published in the Edinburgh Medical and Surgical Journal, the following case of obstinate hæmaturia, successfully treated by gallic acid. The patient was a boy fourteen years of age, who had been passing blood with his urine for several months, supposed to have been caused by a blow which he had received in the lower abdomen from one of his school-fellows. After ineffectual attempts to arrest the discharge of blood, three grains of gallic acid were given every three hours for four days, when the discharge subsided, and did not return. In the case which I have brought forward, we found that the large doses of acetate of lead, combined with opium, did not check the hæmorrhage; whereas the bleeding ceased altogether after the exhibition of the third dose of the gallic acid, at which time the presence of the acid in the urine was proved by the addition of the tinct. ferri sesq. chlorid.

The Employment of the Vapour of Sulphuric Ether, as a Means of rendering surgical Operations painless.

Since the publication of our last Number, a most important and valuable discovery has been made, in using the vapour of Sulphuric Ether for the purpose of rendering patients insensible to pain during surgical operations. All the professional journals, and the public

press, have teemed with instances in which this great discovery has been tested and applied at most of the large hospitals in Great Britain and Ireland; and although the final conclusion to which the profession will come, as to the precise value of this discovery, the cases to which it is applicable, the constitutions over which it exerts its peculiar influence, the precise mode of administering it, and the exact amount of narcotism or intoxication which it is necessary to produce, cannot yet be stated, still we think the following facts and conclusions may be drawn from the experiments which have as yet been instituted.

I. The stupifying effects produced by the inhalation of the vapour of sulphuric ether appear to have been known to chemists for some years past, and to have been occasionally exhibited at chemical lectures. Its therapeutic agency in relieving pain was also proved more than twelve months ago. M. Ducros, at a meeting of the Académie des Sciences de France, on the 16th of March last, presented a memoir on the effects which sulphuric ether produces on man and some of the lower animals: his mode of applying it was by rubbing the palate, fauces, and interior of the mouth with the fluid, but, no doubt, the effects were produced by inhalation of the vapour. M. Ducros described with great accuracy the soporific and anodyne effects of the ether; drew attention to the advantages which might be derived from it in a therapeutic point of view, and pointed out to the Academy the best means of removing the narcotizing influence, which sometimes remains longer than is desirable. This antidote is opium and its preparations(*a*).

II. Doctor Morton, a dental surgeon at Boston, appears to have been the first to make use of this agent as a means of relieving pain during surgical operations, and he soon acquired great and just celebrity in that city, by extracting teeth without the patients, who had previously inhaled the ether, being conscious of the operation. In October last it was applied in the General Hospital, at Boston, with the happiest results; Dr. Morton administering the ether, and Dr. Warren performing the operation. Upon the 3rd of November, Dr. H. J. Bigelow read an account of this discovery (which had by that time been tested by many experiments) before the American Academy of Arts and Sciences. This account, and several private letters, having communicated the facts to several persons in Great Britain, it was taken up very warmly in these countries, and the results are already before the public; several capital operations have been so performed by the surgeons of this city; and there has been a public exhibition of its effects at a meeting of the Surgical Society. This discovery has been claimed by R. H. Collier, M.D., but the most which his claim amounts to is that of having published, in 1843, an account of the unconsciousness which may be produced by the inhalation of ether; but this, as we already stated, was long

(*a*) See *Gazette Medicale*, No. 12, for 22nd March, 1846.

since known: its application to surgical operations is undoubtedly due to the American dentist, who, with Dr. Jackson, has, we understand, taken out a patent for its discovery.

III. The mode of application consists in the patient's inspiring the vapour by the mouth, while the nostrils are closed, and expiring into the surrounding atmosphere; or inhaling though the nose, and expiring though the mouth, as practised at some of the Parisian hospitals. To effect this, various ingenious contrivances have been invented, which have been described and figured by most of our contemporaries.

IV. On commencing to respire it, the patient generally coughs, and feels at first considerable difficulty in continuing the inhalation, but after half a minute or so becomes more reconciled to it. Immediately before narcotism or insensibility takes places, there is often some struggle, and the application has to be continued by force. Its effects are various, and are very likely influenced by the peculiarity of constitution in different individuals, in some, producing decided narcotism (as it has been termed) in two minutes from the commencement of the inhalation, and causing insensibility for about the same period of time, from which state the person quietly awakes as if recovering from an ordinary faint, and leaving no other ill effects than slight giddiness and headach, which go off in a couple of hours. During this process the following phenomena occur:—At first the face becomes flushed, the vessels of the head swollen and turgid, and the pulse accelerated, as the narcotism proceeds, and imediately after the person becomes unconscious to everything but sound, and insensible to pain; the pulse diminishes in frequency, intermits with irregular pauses, and becomes very much slower than it was prior to the commencement of the inhalation; the action of the heart is at the same time laboured, and in some cases irregular; the voluntary muscles of the body relax as in sleep; the face then becomes pale and clammy, and the breathing more or less stertorous. At the commencement of the insensibility the eye-balls are spasmodically affected, and in some cases roll in a remarkable manner. As the insensibility proceeds the pupils are dilated and turned upwards.

What would a physiologist, or practical physician, pronounce such a train of symptoms to arise from? By what term could he designate them? Hysteria, syncope, intoxication, asphyxia, or apoplexy?

In other cases it requires to be inhaled for a quarter of an hour before producing its effects. Again, there are persons over whom it exercises no influence whatever.

In a few cases that we have heard of, both here and in Paris, it does not appear to have produced unconsciousness, or any of the effects just described, but it rendered the patient quite insensible to pain. This is the most useful effect we have yet heard of; and if it should be discovered by what means this result may be

brought about, then, indeed, it will prove one of the greatest blessings conferred on suffering humanity.

Some persons describe their feelings while under its influence as of a most pleasing description, having had pleasant dreams during their state of insensibility. Others, again, say they were conscious of all that was going forward, though they felt no inconvenience from the operation to which they were submitted; almost all say that they were conscious of sound, though unable to distinguish conversation, &c.

In other instances, however, persons do not recover from their insensibility, in the quiet easy manner we have described; a violent struggle takes place, and even a slight convulsion occurs, and movements of the body, quite involuntary, continue for some minutes after. Again, although the effects may in some constitutions wear off within an hour or two, as already mentioned, in others they are much more violent and of far longer duration, consisting in great prostration of strength, irregular action of the heart, great restlessness and anxiety, headach, sickness of stomach, depression of spirits, and (as occurred in one case) even convulsions; in fact, all the phenomena which some constitutions evince from any great nervous shock, and particularly from an over-dose of intoxicating fluid. It is stated that the blood drawn during the state of insensibility is darker than natural.

In a third class of persons a totally different but not less formidable exhibition of morbid symptoms occur, best described as the incoherent madness of inebriety; the eyes roll, the passions are aroused, and a state little short of frenzy ensues. What proportion these latter class of patients bear to the first remains yet to be decided; and by what test we can discover beforehand (except by experiment) what the probable effects of the inhalation will be, has yet to be stated. But then it must be acknowledged that several other medicines produce in some individuals effects just as extraordinary.

Independent, however, of all idiosyncracies, the surgeon is daily required to perform painful and dangerous operations, not only when the suddenness of the shock recently received is such as to preclude the use of a remedy so overpowering, but also when the condition of the constitution has been, by protracted disease, reduced to a state that would render the exhibition of this substance, should it prove deleterious, highly hazardous.

V. Supposing the mildest case, in which the effects are total insensibility for two or even three minutes, with quiet, easy return of animation, what is the benefit, as far as we yet know, which this discovery has conferred on mankind, and what facilities does it afford the operative surgeon, and to what operations it is applicable?

In capital operations, such as the removal of limbs, lithotomy, and all such operations as can be performed within a minute or two by the great manual dexterity of the surgeon, and particularly tooth-drawing, &c. &c., it appears to be of the greatest value; it has been

successfully employed in operations for strabismus, and may be useful in other operations (if they be worth the risk) on the eyelids, &c., but in extraction of cataract(*a*), or other ophthalmic operations where the globe of the eye is concerned, we should fear that it will be highly hazardous. In any operation which may occupy a greater length of time than the ordinary duration of insensibility, it is less applicable, for the action of recovery, and the involuntary struggle which ensues, might prove very hazardous at perhaps the most critical moment; and few have yet been hardy enough to renew the inhalation so as to prolong insensibility beyond a few minutes. Moreover, cases have been recorded, in which the patient, awaking during the operation, suffered as usual.

To the timid, however, and to those also who would not otherwise submit to any operation, it may prove of very great value,

Finding the subject discussed in the public prints, we lately published some remarks upon it in one of our morning papers. These were offered not for the purpose of decrying this valuable means of relieving pain, and lessening the great nervous shock during severe operations,— in some of which, performed on a particular class of patients, and capable of being accomplished within a very short space of time, it is highly serviceable,—but in order, if possible, to prevent its indiscriminate use. It is possible that accidents may occur in the inhalation of ether, and when they do, the present rage for its application may receive a check. Its ultimate, perhaps persistent, consequences on the constitution have not yet been tested, as also its value in relieving pain and suffering induced by disease. It may also be found highly useful in the reduction of dislocations.

We have here endeavoured to present our readers with a brief summary of what really is known upon the subject at present.—Ed.

(*a*) A case of extraction has just been mentioned in the Lancet, in which the vapour was used effectually; yet this in no wise alters our opinion on this subject.

ILLUSTRIOUS PHYSICIANS AND SURGEONS IN IRELAND.

No. III.

DAVID MACBRIDE, M. D.,

With a Portrait.

It is much to be regretted that very scanty memorials of the many eminent physicians and surgeons who practised in Ireland, in the latter part of the seventeenth and during the eighteenth century, have been preserved; yet, being desirous to promote the object which has been already set forth in the memoirs of Sir Patrick Dun and Dr. Bartholomew Mosse, we have been induced to attempt the compilation of the following memoir of one of the most eminent practitioners in Dublin during the last century, and whose published works contributed in no small degree to extend the fame of Irish scientific literature both in England and on the Continent(*a*).

David Macbride was descended from an ancient family of that name in the shire of Galloway, in Scotland; his grandfather came to Ireland about the end of the seventeenth century, and officiated at Belfast to a congregation of Presbyterians. His father was also a Presbyterian clergyman, and married the daughter of Mr. Boyd, of Killabeg, in the county of Down ; he was minister of Ballymoney, near Coleraine, in the county of Antrim, where David was born on the 26th of April, 1726.

He was educated at the public school of Ballymoney, and, after serving an apprenticeship to a surgeon in that place, he entered the Royal Navy; where having served for some time as mate in an hospital-ship, he was subsequently advanced to the rank of surgeon, in which capacity he remained until the peace of Aix-la-Chapelle in 1748.

A seafaring life having afforded him many opportunities of observing scurvy in all its stages, it was about this time he first turned his attention towards the discovery of a remedy for that disease, the investigation of which he carried on for several years, and made many ingenious experiments, which resulted in the publication of his Essays, to be noticed presently.

Subsequent to the treaty of Aix-la-Chapelle, Mr. Macbride went to Edinburgh, where he studied anatomy under Monro, and afterwards to London, where he studied midwifery under Doctors Hunter and Smellie; he also attended the lectures of other distinguished teachers on the different branches of medicine, but did not take a medical degree.

(*a*) For the materials of this memoir we are indebted to our esteemed friend and learned contributor, Dr. Aquilla Smith, who has already thrown so much light upon the history of medicine in Ireland.

In the year 1749 he settled in Ballymoney, and in 1751 he removed from thence to Dublin, and commenced practice as a surgeon and accoucheur in the twenty-sixth year of his age; but, being young and remarkably bashful, his practice for several years was very limited. His abilities were then only known to his family connexions and a circle of select friends. These, however, were captivated with his company, not only from his being possessed of agreeable manners and a pleasing disposition, but for his general knowledge in painting, music, and of many of the branches of polite literature.

Mr. Macbride was a member of the Medico-Philosophical Society, established in Dublin in 1756 (an account of which was given in the preface to the first volume of the present series of our periodical(*a*)), and filled the office of secretary after the death of Dr. Charles Smith, in 1762.

To this "little society(*b*)," which, at its first institution, consisted of only seven members, who met "once a fortnight for their mutual improvement," he first communicated his ideas respecting the treatment of scurvy, and many of the experiments detailed in his "Experimental Essays,—I. on the Fermentation of Alimentary Mixtures,—II. on the Nature and Properties of Fixed Air,—III. on the respective Powers, and Manner of acting, of the different Kinds of Antiseptics,—IV. on the Scurvy; with a Proposal for trying new Methods to prevent or cure the same, at Sea,—V. on the dissolvent Power of Quick-Lime,"—which were first published in London in 1764, 8vo. pp. 267.

These soon attracted the attention of philosophers and physicians, and were shortly after translated into different languages; and on

(*a*) See preface to the first Number of this Journal, p. xxix.

(*b*) It appears that it was customary, at the meetings of the Medico-Philosophical Society, for the members not only to read original papers, but also to make communications in the form of reviews of new or rare books, and reports on recent discoveries, &c. Thus we find among the papers of this body contained in "The Repository," now in the Library of the Royal Irish Academy, a notice of Dr. Macbride's, detailing the contents of "Gooch's Practical Remarks on Surgery," in 1758, and giving therein some short commentary of his own on each section; likewise extracts and translations from the Memoirs of the Parisian Academy of Surgery, on M. Rocolin's essay on the utility of uterine injections, and Leveret's treatise on the method of delivering the placenta, and others of a like nature. In the same year he made a most interesting communication to the Society, shewing that Hippocrates recommended the use of emetics in the treatment of uterine discharges. As this paper is one not only of interest, but of practical value, even in the present day, we shall, at some future period, publish it entire in our Medical Miscellany, as well as other communications from the pages of the manuscript work just referred to. In 1761 he gave an account of Astruc's theory of menstruation.

At the meeting of this Society on the 16th of October, 1764, Dr. Rutty gave a general analysis and commentary upon the first four of Dr. Macbride's Experimental Essays, and spoke in highly commendatory terms of their universal influence on practical medicine.

the 27th of November, 1764, the University of Glasgow testified their approval of the work, by conferring the degree of Doctor of Physic on the author.

A "second edition, enlarged and corrected," was published in London, in 1767, 8vo. pp. 296, and in the same year a tract of thirty-eight pages, giving "an historical Account of a new Method of treating the Scurvy at Sea, containing ten Cases, which shew that this destructive Disease may be easily and effectually cured without the aid of fresh vegetable Diet."

In the first three essays, which are preliminary to the fourth, we do not find any thing which calls for particular notice. In forming our estimate of the value of chemical experiments made about the middle of the last century, we should endeavour to forget the more exact knowledge of our own times, and place ourselves in the position of a contemporary with the author; for, though instances might be quoted in which the inferences drawn from the experiments are erroneous, yet the facts detailed in the experiments will ever remain as evidences of the ability and patience with which the investigations were pursued.

The following extracts from the fourth essay, will put the reader in possession of Dr. Macbride's theory, and the mode of treatment proposed by him for the cure of scurvy:

"For some time, even before I engaged in the course of experiments which have been set forth in the three preceding essays, I was firmly of opinion, that the cure of the *sea scurvy* depended chiefly, if not altogether, on the *fermentative quality* of the *fresh* vegetables; which are found, by experience, to be the only things that, with certainty, conquer this destructive disease. And in consequence of this persuasion, it occurred to me, that as there are vegetable substances, which, though not perfectly recent, are yet capable of fermentation, such in particular as *common malt;* that this, if taken in the way of medicine, would, in all probability, produce effects similar to those produced by green vegetables, and consequently cure the scurvy; and as *malt* can be preserved sound, for a considerable length of time, it might be carried to sea, and there kept, in order to make *wort* occasionally as it might be wanted; and thus prove a remedy, always in readiness, against that fatal disease."—*Second Ed.* p. 167.

"The method in which it is proposed to prepare the *wort*, is, to take *one* measure of the *ground malt*, and pour on it *three* measures of boiling water; stir them well, and let the mixture stand, close covered up for three or four hours, after which strain off the liquor."—*Ibid.* p. 194.

The mode of administration proposed, is, to boil the *wort* "into a *panado*, with sea biscuit, and some of the dried fruits that are usually carried to sea; the patient to make at least two meals a day on this palatable mess, and to drink a quart or more of the *fresh infusion*, in the course of the twenty-four hours."—*Ibid.* p. 189.

About the beginning of the year 1762 Dr. Macbride communicated his views on the treatment of scurvy, in the form of a letter,

to his friend, Dr. George Cleghorn, Professor of Anatomy in the University of Dublin, by whom copies were transmitted to Dr. Wm. Hunter, and to Henry Tom, Esq., one of the Commissioners for taking care of Sick and Wounded Seamen. Through their influence, the Lords of the Admiralty, in May, 1762, gave orders to have the *wort* tried in the naval hospitals at Portsmouth and Plymouth. The Doctor also acknowledges his obligations to Vice-admiral Sir Charles Saunders, by dedicating to him the second edition of the Essays, published in 1767.

Notwithstanding all this powerful influence, Dr. Macbride, writing on the 12th of December, 1766, is compelled to say: "I take it for granted that nothing has been done in consequence of that order, nor any report ever made."—*Second Edit.* p. 171, *note.*

In a postscript appended to the second edition of the Essays, there is "An extract from a medical journal kept by Mr. Alexander Young, surgeon to His Majesty's ship Jason," of which Captain *John Macbride*, only brother to the Doctor, was commander, in which journal is given an account of the successful treatment of four cases of scurvy by wort, which, with the cases detailed in the "Historical Account" published in 1767, and some particulars in the chapter on scurvy in Macbride's "Practice of Medicine," comprise all the evidence collected by the author, who, in 1777, intimated his intention to publish all the letters and reports which had been communicated to him, but he did not live to carry his intention into effect.

The fifth essay, the title of which is, "On the Dissolvent Power of Quick-Lime," contains a number of miscellaneous experiments and observations, all tending to a further proof of what had been advanced in the four preceeding essays.

After giving a summary of Dr. Black's theory of the constitution of calcareous earth, Dr. Macbride adds: "But it occurred to me, that it might possibly be still further proved, and that in a way which would afford an ocular demonstration;" and with this object the first experiment was devised. Into a filtered solution of lime-water fixed air (carbonic acid gas) was passed by means of an ingeniously-contrived apparatus, of which a figure is given; "and it was highly pleasing to see the particles of quick-lime, which, but two or three minutes before, were quite invisible, and dissolved in the water, all running together and falling to the bottom:" the precipitate, when collected, "effervesced violently with spirits of vitriol (sulphuric acid), and thus was the theory of Dr. Black placed beyond the reach of contradiction."—*Second Ed.* p. 229.

Having determined, "in three different instances, that the lime is precipitated from lime-water by restoring to it the fixed air," he adds, "may not lime-water, therefore, upon this principle, be used as a *test* to try whether or not bodies contain *fixed air?*"

In the seventeenth experiment, he proved the truth of his conjecture, by shewing that the "*perspirable matter*," as emitted from the lungs, contains fixed air or carbonic acid. "Three ounces of filtered lime-water being put into a phial, and a funnel fixed close into the neck of it," he says, "I blew in my breath through the funnel; and

by the time I continued so doing for ten or twelve minutes, I found the water growing turbid, and the lime becoming visible." He also determined the existence of carbonic acid in the sweat and in the atmosphere, and states that when carbonic acid is evolved in the stomach, from effervescent mixtures, "it often operates like a charm in restraining vomitings."

He also proved that saliva does not contain fixed air, but that it absorbs it rapidly.

The solvent power of lime-water on vegetable matter was the subject of many of his experiments; and, of Peruvian bark infused in it, he says: "I can venture to assure the reader, from repeated experience, that the bark, given in this manner, will scarce ever fail; particularly with regard to the uterine discharges, when they proceed from mere relaxation or weakness."(*a*)

From the success of the first experiment, Dr. Macbride began to think that the sulphur in the natural sulphureous waters might also be rendered visible as well as lime. He therefore instituted experiments, the result of which was that they "pointed out a method of making a pure solution of sulphur, which, being diluted to the proper degree, gives an artificial sulphureous water, perfectly resembling the natural as to taste, smell, transparency, and want of colour, and not liable to grow turbid on the addition of acids, which all other artificial solutions of sulphur, hitherto known, constantly do."

Dr. Thomson, in his History of Chemistry, justly says, that previous to Mr. Cavendish's investigations, "Dr. Macbride had already ascertained that vegetable and animal substances yield fixed air by putrefaction and fermentation."—Vol. i. p. 343.

But the extracts which we have made from Dr. Macbride's essays shew that he was entitled to more credit for his discoveries in pneumatic chemistry than has been hitherto awarded to him. The following statement of Dr. Thompson is not reconcileable with the fact of the publication of Macbride's essays in 1764:

"Pneumatic chemistry *had been begun* by Mr. Cavendish, in his valuable paper on carbonic acid and hydrogen gases, published in the Philosophical Transactions for 1766."—*Hist. of Chemistry*, vol. ii., p. 18.

About this time Dr. Macbride's practice rapidly increased, (being upwards of £500 a year); and, feeling assured that his abilities were appreciated, and that he was now in a position to insure success, he set up a carriage in November, 1767(*b*).

(*a*) Besides the ordinary mode of administering bark in effervescence with carbonate of ammonia, our distinguished contributor, Mr. Donovan, has lately succeeded in charging a solution of the syrup of bark with carbonic acid gas, which makes an agreeable and exceedingly efficacious draught.

(*b*) It may be interesting to state that in three years after (1770), Dr. Macbride's professional receipts amounted to £1069 18*s.* 5*d.* The fee at that period was usually a guinea (£1 2*s.* 9*d.*) On the fifth year following, his income from fees amounted to £1564 19*s.* 1½*d.* In 1777 he made nearly £1800. We have extracted those particulars from Dr. Macbride's fee-book, kindly placed at our disposal by Dr. Evory Kennedy.

In the December following he proposed a new process of tanning leather, which is noticed as follows in the Proceedings of the Dublin Society for March 31st, 1768:

"It appearing by the testimony of three eminent tanners of this city, viz., Mr. William Laban, Mr. Samuel Henderson, and Mr. Robert Hutton, that a calf's skin (the same being exhibited) which was tanned after a new method, lately discovered by Dr. David Macbride, was well and sufficiently tanned; and it further appearing by Mr. Laban's testimony, who tanned the said skin, that the same was completely done within the space of four weeks, whereas it would have taken from four to six months to tan the same skin as perfectly, after the method of tanning hitherto, and usually practised; Mr. Laban also testifying that the method of tanning lately discovered by Dr. Macbride is in every respect much easier and cheaper to the tanner than the common method of tanning, and that very great advantages must accrue therefrom to this manufacture:—Dr. David Macbride, in consideration of his important and ingenious discovery, was unanimously elected an Honorary Member of this Society."

It was also proposed, "That a silver medal be presented to Dr. Macbride, as a further mark of honour to him from this Society," which was agreed to at the meeting, on Thursday, 14th of April.

He subsequently received a gold medal from the Society of Arts and Commerce in London, as a mark of that body's appreciation of his useful discovery.

On the 14th of November, 1769, a petition from Dr. Macbride was presented to the Irish House of Commons, setting forth that he had "invented a method of tanning, founded on chemical principles, whereby leather is improved in its quality, tanned in one-third of the time required by the process hitherto known and practised, and with the saving of one-fourth in the expense of tanning materials, particularly of oak bark;" and, "That the petitioner is ready to disclose his secret, and instruct the tanners of Ireland in general, on such consideration as the House shall deem adequate to the importance of his discovery, and think a recompence sufficient, for giving up the profits which may be secured to him by the usual privilege of an exclusive patent."

A committee was appointed, which, on the 18th of November, brought up their report, concluding with the resolution, "That it is the opinion of the Committee, that the petitioner deserves the aid of Parliament." It does not appear that any further steps were taken by the House, or that the promised aid was ever conferred on the discoverer.

The improvement which was sanctioned by the Dublin Society, and for which compensation was sought for from the House of Commons, consisted in substituting lime-water for common water, in preparing "ooze," as it is termed by the tanners.

In September, 1772, Dr. Macbride communicated to Dr. William Hunter "An Account of two extraodinary Cases after delivery,"

which were published in 1776, in the fifth volume of the Medical Observations and Inquiries.

For some years after he obtained a medical degree, he employed part of his time in the duties of a medical teacher. In the winter of 1766 he delivered at his own house his first course of lectures, which in 1772 were published in London, in one volume quarto, under the title of "A methodical Introduction to the Theory and Practice of Physic." From an entry in his fee-book, we learn that he received from pupils, for his first course of lectures, twenty-four guineas, or £27 6*s.* Irish.

In 1774 these lectures were translated into Latin, and published at Utrecht, in two volumes octavo.

"The second edition, enlarged and corrected," was published in Dublin, in 1777, in two volumes octavo, under the title of "A methodical Introduction to the Theory and Practice of the Art of Medicine." The Publisher, at the same time, announced as "Preparing for the Press,—Medical Journals, kept by the Surgeons of His Majesty's Ships employed in exploring the Southern Hemisphere: being a necessary Appendix to Hawkesworth, Cook, and Foster. To which are added Letters, and Observations, shewing the most effectual ways of preventing and curing the Scurvy, and other Diseases commonly incident to Seamen in long voyages."

This work, which contains the substance of the course of lectures commenced in 1766, professes to give a "General View of the Theory and Practice of Physic," and is divided into two parts. The first consists of six books, and explains the principles on which the art of medicine is founded; the second or practical part was intended to consist of twelve books, of which nine only were published; and as to the three books in which the author proposed to treat of *local*, *sexual*, and *infantile* diseases, he never accomplished them.

The author modestly styles his work a compilation, chiefly designed for the use of students; it contains, however, many original observations, and gives a good summary of the rules of practice adopted by the most skilful physicians of the last century.

In the second edition he has published the first description of a disease which he named "morbus vesicularis," and which bears a close resemblance to the "chronic pemphigus," or "pompholyx diutinus," of Bateman.

Dr. Macbride's success in practice may be dated from the publication of the second edition of his essays, in 1767, in which year his receipts were nearly double the amount received in any of the preceding sixteen years. His great abilities being universally known, the public seemed now desirous to make amends for having overlooked him so long, the consequence of which was, that his numerous engagements, particularly as an accoucheur(*a*), having for a long time kept him in a state of agitation, both of body and mind, at last induced a total incapacity for sleep; still, however, he retained his

(*a*) From a memorandum in his fee book, we learn that he attended 1065 midwifery cases, from 1767 to 1777, both years included.

usual good spirits, and continued to practise up to the 16th of December, 1778, when an accidental cold brought on a fever, of which he died, in the fifty-third year of his age, at his house in Cavendish-row, on the 28th of December, 1778, and was buried in St. Audoen's Church(*a*).

During the twenty-five years of Dr. Macbride's professional career, he was the contemporary of some of the most distinguished physicians and surgeons of the last century; among whom we may enumerate, Rutty, O'Halloran, Mosse, Fielding Ould, Purcell, Wetherall, Clossy, Pringle, Hanly, Morris, and the elder Dease, whom he assisted in the experiments which he made on the various lithontroptics about the year 1775(*b*).

The portrait prefixed to this memoir has been reduced by Mr. Connolly from a large print, published in London in 1797, and engraved by J. T. Smith, after the original picture by Reynolds, of Dublin. The glass jar inverted in water, alludes to the Doctor's discoveries in pneumatic chemistry. We cannot say in whose possession the original picture is, but hope that this notice may lead to its discovery.

Dr. Macbride was married first to Miss Margaret Armstrong, on the 20th of November, 1753, at St. Audoen's Church, Dublin; and on the 5th of June, 1762, he was married in the same church to his second wife, Dorcas Evory(*c*), widow of George Cumming, Esq., of Bride-street, Dublin, merchant. He died without issue, and had

(*a*) Dr. Macbride was a subscriber, for four copies, to Pool and Cash's "Views of Dublin," published in 1760. In a note at page v. the account of his death is copied *verbatim* from Walker's Hibernian Magazine, with the addition that he "died in January, 1779." The following extract from Saunders' News-letter of the 29th December, 1778, is, however, conclusive: "Died yesterday, of a fever, at his house in Cavendish-row, in the fifty-second year of his age, David Macbride, M. D., universally and most deservedly lamented," &c.

(*b*) From Mr. Dease's graphic dedication of his work on the Hydrocele to Mr. Morris, then the most distinguished surgeon in this city, we learn that about this period, and even so late as 1782, the only public and authorized lectures given here were those in the University, on Anatomy, Chemistry, and Botany. Those on the other branches of medical science—on the foundation of Sir Patrick Dun, and directed, according to the wording of his will, to be delivered in Latin,—do not, at this time, appear to have been available to the students in Dublin, who then amounted to about 300; for Mr. Dease says: "Which circumstance" (their being delivered in Latin), "I have heard sometimes mentioned as an apology for not giving them at all." See A Comparison of the different Methods of cutting for the Stone, with some Remarks on the Medicines generally used as Solvents, &c., by W. Dease. Dublin: Williams, 1782—p.144.

(*c*) Dr. Macbride, shortly after he settled in Dublin, paid his addresses to Miss Evory, and succeeded in engaging her affections; but the proposed alliance not meeting with the approbation of the young lady's father, she yielded to parental authority, and married Mr. Cumming. In the course of a few years Mr. Cumming died, and left his widow with an only son. The Doctor, not calculating on the death of his own wife, evinced his anxiety for the welfare of his "first love" by using all his influence to induce his friend, Dr. George Cleghorn, to take the widow. Of the lady's wishes on this occasion we are not informed; but we have it on good authority that Dr. Cleghorn's reply to his friend was, "Oh! no, Davy, that's not in my way!"

an only sister, Mary, and a brother, John, a captain in the Royal Navy.

In a curious and rare little book, "The Medical Review, a Poem, being a Panegyrick on the Faculty of Dublin, by John Gilborne, M. D., Dublin" [1775], the subject of this memoir is lauded in the following unpretending verses:

"A celebrated writer is Macbride,
Great is his merit, moderate his pride;
Cures all diseases that mankind befal,
Relieves the fair by rules obstetrical;
Prescriptions elegant his sense declare,
The sick retrieve by his auspicious care."

The following record of his death is taken from Walker's Hibernian Magazine for January, 1779: "Of a fever, at his house in Cavendish-row, in the fifty-second [fifty-third] year of his age, most sincerely and deservedly regretted by a numerous acquaintance, David Macbride, Esq., M. D. His amiable manners procured him the love and affection of all ranks of people, and his ingenious essays in physic and philosophy raised his reputation very high in the learned world. He was an honorary member of the Dublin Society, and one of the Governors of the Lying-in Hospital."

Dr. Houlton, of Dublin, in the same Magazine, paid his tribute to the memory of Dr. Macbride, in an elegy of fourteen stanzas, of four lines each.

Having pointed out the only sources from which we can now form an opinion of the subject of this memoir as a man of science, we shall conclude with the summary of his character in all the relations of life, so feelingly described in the following lines, reprinted from Walker's Hibernian Magazine:—

"*On the Death of David Macbride, Esq., M. D. By a Lady.*

"Accept these lines, tho' unadorn'd by art,
The genuine dictates of a sorrowing heart.
Mac Bride's no more—all earth and nature cries:
I have lost my friend—the hope of weeping eyes.
Farewell—he's gone, removed from anxious care,
From busy life, from arduous thoughts, afar;
From the relief of mortals here below,
To sooth their sorrow, mitigate their woe.
No selfish views e're lurk'd within his breast,
Nought there but noble thoughts could ever rest.
Why should I tell what virtues graced his mind,
An honour to his country and mankind.
With boundless knowledge and extensive skill,
A heart unbounded by a generous will;
His sympathetic soul felt others' woe;
Was virtue's friend—to vice a mortal foe.
"Thou cruel, envious, and rapacious grave,
You've got a victim which no art could save.
I know the stroke was from the hand divine,
To whom I may complain, but not repine.
Oh may thy greatness and immortal fame,
To distant ages signalize thy name!"

Jan. 6, 1779. J. R.

Dr. Breen, in an address delivered at a meeting of the Obstetrical Society, on the 27th of November, 1839, in which he has given an interesting account of the progress of midwifery in Dublin, justly speaks of Dr. Macbride as having "attained great eminence as a practitioner of midwifery in this city," and adds, "he had the high distinction of attending the Countess of Mornington, at the birth of the hero of Waterloo;" in support of which statement he concludes with the following narrative:

"At a contested election, when the then Arthur Wellesley was elected member for the borough of Trim, a petition was presented against the return, on the ground that the returned member was not one-and-twenty; some difficulty at the moment occurred in proving his age, and the late Dr. Evory, who possessed Dr. Macbride's fee-books, attended as a witness before a committee of the Irish House of Commons, with Dr. Macbride's entry of the birth of this distinguished individual, and, in addition to other evidence, the age was admitted legally proved by the Committee."—*Dub. Journ. of Med. Science*, vol. xvi., p. 528.

As every circumstance relative to the illustrious hero of Waterloo, will, in course of time, engage public attention, we felt anxious to confirm Dr. Breen's statement by reference to the fee-book of Dr. Macbride, now in the possession of Dr. Evory Kennedy, the inheritor of the late Dr. Evory's library.

Dr. Kennedy having kindly permitted us to examine the fee-book, which comprises an accurate account of Dr. Macbride's professional receipts, with the names of his patients, from the first of January, 1767, to the 16th of December, 1778, we were surprised and disappointed at not finding any corroboration of the statement made on the authority of Dr. Evory. The Countess of Mornington does not appear to have been at any time a patient of Dr. Macbride, while the names of many of the highest nobility frequently occur.

Colonel Gurwood, in his Despatches of the Duke of Wellington, gives the date of his birth as the 1st of May, 1769.

In 1790, The Hon. *Arthur Wesley* (as he is called in the Journals of the Irish House of Commons) was elected one of the representatives for the borough of Trim. The election commenced on Thursday, the 29th of April, and the poll continued four days, consequently the honourable member attained his majority while the election was pending. Dr. Breen's account is correct in every other particular.